

Sydney Water Corporation
Operational Audit 2000/2001

INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

Sydney Water Corporation
Operational Audit 2000/2001

Compliance No 6, 2002

March 2002

ISBN 1 877049 15 8

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INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

Our reference: 01/419

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13 March, 2002

The Hon K Yeadon
Minister for Energy and Utilities
Level 36 Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Minister

Operational Audit of Sydney Water Corporation 2000-2001

In accordance with Section 31 of the Sydney Water Act 1994, The Tribunal is pleased to submit the independent Operational Audit Report of Sydney Water Corporation for the period 1 January 2000 to 30 June 2001. The Report details the findings of the sixth Audit of the Corporation since its inception on 1 January 1995.

The Tribunal is pleased to report that the Audit has shown a trend of overall improvement in the Corporation's performance against its Operating Licence obligations. In the majority of cases, the Audit found that Sydney Water achieved high or full compliance for these requirements. Further, the Auditor has made comment on the cooperation shown by Sydney Water staff throughout the entire audit process.

Based on this report, the Tribunal recommends that no penalties be imposed on the Corporation.

Some of the issues raised by the Auditor have been addressed since the Audit was completed. In this respect, the Tribunal would like to note that Sydney Water's Customer Contract was sent to your office on 23 November 2001. Sydney Water published this contract on 4 March 2002.

While the Tribunal is pleased to note the improvement in the Corporation's compliance as a whole, the Auditor has provided comment on areas where performance needs to be improved.

Demand Management

The Tribunal notes the Auditor's concerns about Sydney Water's demand management performance. The Tribunal will be reviewing these targets over the next few months and is due to report on this licence condition by 30 September 2002.

Water Quality

While the auditor praised Sydney Water's risk management system for water quality, the report notes some procedural shortcomings in the integration between this risk management system and Sydney Water's operational systems. The auditor notes similar weaknesses in the integration between Sydney Water's risk management system and operating systems of the Sydney Catchment Authority. The Tribunal has recommended specific Ministerial Requirements to address these water quality issues.

Dispute Resolution

The auditor has suggested some improvements to the dispute resolution process. The Tribunal is keen to ensure that all internal disputes are appropriately monitored and reported and that the external dispute process complies with the requirements of the Operating Licence.

Memoranda of Understanding

Sydney Water has Memoranda of Understanding with the Environment Protection Authority, the Water Administration Ministerial Council and NSW Health. The auditor noted the need to update these documents to reflect the current regulatory environment. The Tribunal understands that these documents are currently being negotiated.

Strategic Framework of Asset Management

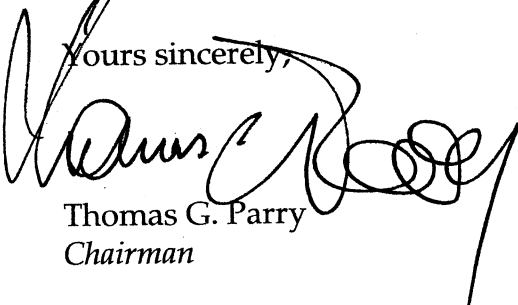
Sydney Water has prepared a Strategic Framework of Asset Management in response to your requirement. While recognizing that the Ministry for Energy and Utilities has primary carriage of this Framework, the auditor has suggested that Sydney Water should further develop this strategy.

Monitoring and Reporting Protocol

Sydney Water and the Tribunal are currently developing a monitoring and reporting protocol. The auditor's report notes a number of monitoring and reporting issues. It is the Tribunal's intention that these are incorporated within the protocol. Where necessary, this protocol will clarify the Tribunal's expectations for data collection, monitoring and reporting of data pertinent to the Operating Licence. It will also provide a mechanism to discuss and resolve operational and compliance issues associated with the Operating Licence.

The Tribunal intends to monitor Sydney Water's progress in addressing all matters raised by the Auditor.

Yours sincerely,

A large, stylized handwritten signature in black ink, appearing to read 'Thomas G. Parry', is written over the typed name and title.

Thomas G. Parry
Chairman

SYDNEY WATER CORPORATION

OPERATIONAL AUDIT 2000/2001

FINAL REPORT

February 2002

CLIENT: Independent Regulatory and Pricing Tribunal	
PROJECT: Sydney Water Audit	
TITLE: 2000/01 Operational Audit of the Sydney Water Corporation	
DOCUMENT REFERENCE NO: VA0491/ R001	
PROJECT MANAGER M. Pignatelli	FILE NO: 900
SPELL CHECK (WP OPERATOR) BY: KG	SECTION: 156

Document Details		Preparation & Self Check	Independent Review By:	Corrective Action	Approved By:
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N-QAF05.0

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LIST OF ABBREVIATIONS

Acronym	Description
ACCESS	Automated Corporate Customer Enquiry Service System
Act	Sydney Water Act 1994
ARMCANZ	Agriculture and Resource Management Council of Australia and NZ
AWT	Australian Water Technologies Pty. Ltd.
CEO	Chief Executive Officer
CIBS	Customer Information and Billing Service
CRC	Co-operative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSR	Customer/Stakeholder/Regulator
DLWC	Department of Land and Water Conservation (NSW)
DLWPA	Designated Low Water Pressure Areas
DUAP	Department of Urban Affairs and Planning (NSW)
DWQMS	Drinking Water Quality Management System
EDC	Every Drop Counts
Egis	Egis Consulting Australia
EIS	Environmental Impact Statement
EMS	Environmental Monitoring Services, a division of AWT
EP	Environment Plan
EPA	Environment Protection Authority (NSW)
ESD	Ecologically Sustainable Development
EWON	Energy and Water Ombudsman NSW
GIS	Geographical Information Systems (computer mapping)
HRC	Healthy Rivers Commission
HVRF	Hunter Valley Research Foundation
IPART	Independent Pricing and Regulatory Tribunal (NSW)
ISF	Institute for Sustainable Futures
IWA	International Water Association
JLG	Joint Liaison Group
LR	Licence Regulator
ML	Megalitre (1 million litres)
MOU	Memorandum of Understanding
M&R	Measurement and Reporting
NATA	National Analytical Testing Authority
NCC	Nature Conservation Council (NSW)
NHMRC	National Health and Medical Research Council
NHT	Natural Heritage Trust
NPWS	National Parks and Wildlife Service (NSW)

NSW Health	NSW Department of Health
PENGO	Peak Environmental Non-Government Organisation
POEO	Protection of the Environment Operations Act, 1997
REP	Regional Environmental Plan
RIS	Regulatory Impact Statement
SCA	Sydney Catchment Authority
SEDA	Sustainable Energy Development Authority
SEPP	State Environmental Planning Policy
SLG	Strategic Liaison Group
SoE	State of Environment (report)
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
Sydney Water	Sydney Water Corporation
TEC	Total Environment Centre
WAMC	Water Administration Ministerial Corporation
WAMS	Works and Asset Management System
WFP	Water Filtration Plant
WHO	World Health Organisation
WML	Water Management Licence
WSAA	Water Services Association of Australia

GLOSSARY/DEFINITIONS

GENERAL TERMS AND DEFINITIONS

Term	Meaning
Act	Sydney Water Act 1994.
Area of Operations	As specified in section 10(1) of the Act and described in Schedule 2 of the Operating Licence.
Audit period	1 January 2000 to 30 June 2001.
Auditor	Egis Consulting Australia Pty. Ltd. in association with Hunter Valley Research Foundation.
Bulk Water	Water supplied by the SCA to Sydney Water (under the Bulk Water Supply Agreement) and to customers other than Sydney Water.
Bulk Water Supply Agreement	The Bulk Water Supply Agreement between the SCA and Sydney Water signed on 15 September 1999.
Commencement Date	12 April 2000.
End of Term Review	A review of the Operating Licence to be undertaken on or about 1 January 2004.
Function	Means a power, authority or duty.
Mid-term Review	A review of the Operating Licence to be undertaken on or about 1 January 2002.
Minister	The Minister responsible for administering the provisions of the Sydney Water Act, 1994.
Operating Licence	The licence between 1 January 2000 and 1 January 2004.
Water Management Licence	A Water Management Licence granted under the Water Act, 1912 and issued by DLWC on 23 April 2001.

COMPLIANCE TABLE ASSESSMENT

Term	Meaning
Grading of Compliance	The following ratings are used to grade achievement of compliance with a Licence condition.
Full Compliance	All requirements of the condition have been met.
High Compliance	Most requirements of the condition have been met with some minor technical failures or breaches.
Partial Compliance	The major requirements of the condition have been met.
Low Compliance	Key requirements of the condition have not been met but minor achievements regarding compliance have been demonstrated.
Non Compliance	The requirements of the condition have not been met.
Insufficient information	Relevant, suitable or adequate information to make an objective determination regarding compliance was not available to the Auditor.
No Requirement	The requirement to comply with this condition does not occur within the audit period or there is no requirement for Sydney Water to meet, such as a definition, or a requirement placed upon another agency.

PREFACE

Egis Consulting Australia (Egis), in association with the Hunter Valley Research Foundation (HVRF), was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to undertake the 2000/2001 Operational Audit of the Sydney Water Corporation (Sydney Water). The 2000/01 Operational Audit (and the extent of this report) covers the period 1 January 2000 to 30 June 2001.

Sydney Water is a State Owned Corporation, which is wholly owned by the NSW Government. The roles and responsibilities of Sydney Water derive from the *Sydney Water Act 1994* (the Act) and the Operating Licence issued pursuant to Part 5 of the Act. The Operating Licence enables Sydney Water to provide water, sewerage and some stormwater drainage services to approximately 4 million customers within the areas of Sydney, the Blue Mountains and Illawarra Regions.

The scope of the audit is defined in Part 10 of the Operating Licence. The scope includes assessment of compliance against the Ministerial requirements as presented by the Minister responsible for administering provisions of the Sydney Water Act, 1994, following the Operational Audit 1999/00.

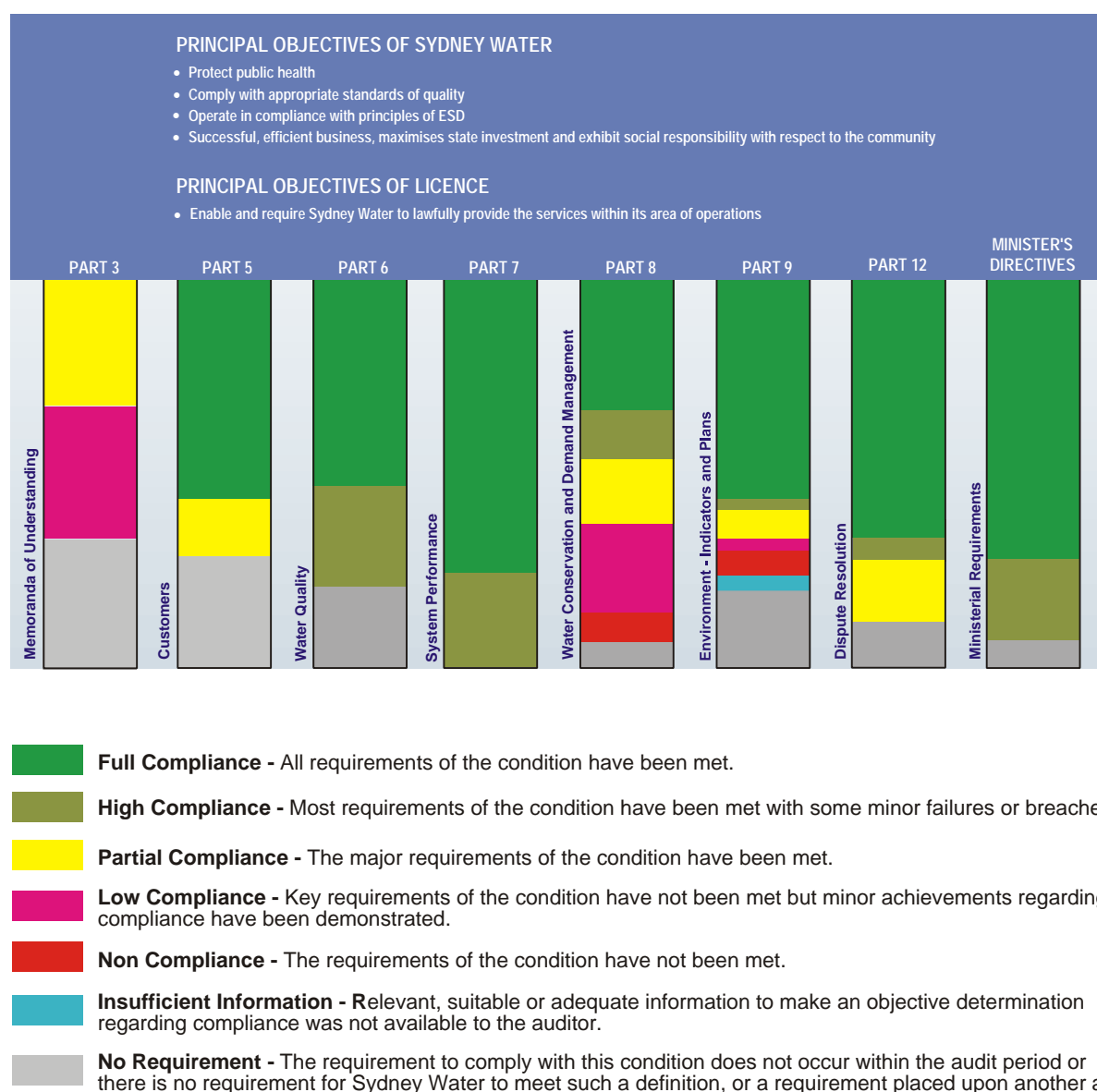
The findings of the report are presented in a format consistent with the Operating Licence structure and not in a “prioritised order” or “order of significance”. The report also identifies factors that have affected compliance, or may affect compliance, in the future and presents recommendations to improve compliance in subsequent years.

The audit methodology involved the preparation of an audit plan, inception meetings, application of audit tests, review and reporting. The audit tests directly relate to the respective clauses of the Operating Licence conditions, assembling evidence through document review, interviews and analysis to determine compliance.

EXECUTIVE SUMMARY

The Sydney Water Corporation (Sydney Water) has demonstrated generally 'Full' (64%) to 'High compliance' (13%) with the operating Licence for the audit period from 1 January 2000 to 30 June 2001, although some areas of 'Partial' (13%), 'Low' (5%), 'Non-compliance' (4%) and 'Insufficient Information' (1%) have been recorded. A number (19) of other Licence clauses had 'No requirement' during this audit period. **Figure 1** provides an indicative overview of Sydney Water's level of compliance.

Figure 1: Overview of Compliance for 2000/01 Audit Period



NOTE: Figure is indicative only.

Compliance against each Part of the Licence is summarised below in the order the parts appear in the Licence:

Memoranda of Understanding

- Sydney Water obtained 'Partial compliance' with its requirement to maintain Memoranda of Understanding (MOU) with the Water Administration Ministerial Corporation (WAMC), NSW Department of Health (NSW Health) and Environment Protection Authority (EPA) for the term of the Licence. Only the MOU with NSW Health had been maintained, the others being out of date.

Customer and Consumer Rights

- Sydney Water obtained 'High compliance' with the terms of the Customer Contract although the current contract is presently under review by the Licence Regulator. Sydney Water obtained 'Full compliance' with the requirement to develop the Code of Practice and Procedure on Debt and Disconnection. 'Partial compliance' was awarded for one component, being 'payment option', as not all bills audited had the options included.

Water Quality

- Sydney Water obtained 'Full compliance' in relation to the Water Quality requirements of the Licence for the supply of drinking water to its customers, supply of 'other grades' of water, risk minimisation in its management of water quality, monitoring and preparation of strategic documents (such as the Five-Year Drinking Water Quality Management Plan) and a Drinking Water Quality Incident Management Plan. A 'High compliance' was awarded on the reporting aspect as results were reported on a system-wide aggregate basis. This basis can make it difficult to distinguish whether particular supply zones experience water quality problems. (It is recommended that this system of reporting be reviewed).

System Performance

- Sydney Water obtained 'Full compliance' with the three System Performance Standards of drinking water supply continuity, drinking water pressure and sewage overflows onto private land. Sydney Water has well-structured and documented systems for monitoring and reporting the performance standards, and has had consistent programs in place over a number of years to ensure the standards are met. Sydney Water obtained 'Full to high compliance' with requirements relating to standards for low water pressure areas, progress on reducing the number of unsewered properties and requirements relating to the Asset Management Strategy.

Water Conservation and Demand Management

- Sydney Water obtained 'Partial compliance' with respect to actions taken to reduce the quantity of water it draws from all sources (other than Re-use water) as the projected outcomes are insufficient to meet the 2004/05 or 2010/11 water conservation targets. Sydney Water obtained 'Partial compliance' with respect to actions taken to meet non-potable re-use targets (for 1995-2000) established in 1995, as the targets were not met. Sydney Water obtained 'Full compliance' for developing the demand management strategy, however obtained a diverse range from 'Full compliance' to 'Non-compliance' for the requirements relating to reporting on the implementation of the strategy. A 'Non-compliance' was awarded for not reporting on forecast supply deficiencies. Sydney Water has developed a strategy and undertaken significant actions to implement the National Water Conservation Rating and Labelling Scheme, however it is progressing slower than expected hence a 'High compliance', as opposed to 'Full', was awarded.

Environment – Indicators and Plans

- Sydney Water obtained an overall 'Partial compliance' relating to requirements for environmental indicators. Sydney Water did not prepare a report that described its performance against all gazetted environmental indicators and numerous environmental indicators were not monitored or compiled. Sydney Water obtained 'Full to High compliance' for requirements relating to Environmentally

Sustainable Development (ESD) indicators and the Environment Plan. Technical 'Non-compliances' were obtained for requirements relating to the timely release of an annual public report on its performance against the Environmental Indicators, ESD Indicators and the Environment Plan. Sydney Water was ready to make the report available to the public by the required date, however the report contained water quality data collected by BeachWatch, that could not be released prior to the release of the BeachWatch data to the Parliament by the Minister for the Environment.

- Sydney Water appears to have complied with the required reductions in energy usage of buildings however, there is low confidence in the reliability of the energy use data. Hence, a compliance rating of 'Insufficient Information' was obtained. Sydney Water demonstrated 'Full compliance' with the Licence requirements relating to the Botany Wetlands and the management of Trade Waste.

Dispute Resolution Scheme

- Sydney Water obtained "Partial compliance" for the requirements relating to the establishment, review and reporting on its internal complaints handling system. The introduction of the Works and Asset Management System (WAMS) as the main complaint recording system, part way during the audit period, limited the preparation of the reports required under the Operating Licence. The format of the reports did not comply with the Licence. While the reports did not strictly comply, it is more critical that the information be synthesised and presented in a form so that it can be used as a diagnostic tool to help identify systemic problems to guide strategic planning and future capital expenditure plans.
- Sydney Water obtained 'Full compliance' for the requirements relating to the establishment and function of the external (independent) dispute resolution scheme. The Energy and Water Ombudsman NSW (EWON) appears to be a positive mechanism to assist in resolving complaints. Outcomes of the three-year review, presently being undertaken by EWON, will need to be considered as part of the next audit. It is also recommended that Sydney Water should obtain an annual independent report from EWON that indicates EWON's compliance with the relevant clauses of the Operating Licence.

Other

- Sydney Water obtained 'Full compliance' in handling Complaints to Other Bodies.
- Sydney Water demonstrated 'Full' to 'High compliance' with meeting the requirements of all of the Ministerial directives which followed the 1999 Operational Audit report.

The Sections following this Executive Summary further summarise findings from the Audit and includes:

- "The Big Picture" and the findings of the audit against the principal objectives of Sydney Water, as defined by the Act.
- A detailed tabular summary of Compliance against each Part of the Licence; and
- A Summary of the Key Recommendations.

"THE BIG PICTURE"

This section of the summary presents the findings of the audit against the principal objectives of the Corporation as defined by the Sydney Water Act, 1994. The principal objectives are broadly defined to protect public health, protect the environment and to be a successful business.

The extent of the assessment of Sydney Water's performance against these principal objectives is controlled by the scope of this audit.

Protect Public Health

Water Quality

- Excellent Risk Management System.
- Opportunity for improved integration of risk management systems with operational systems.
- Opportunity for improved integration with Sydney Catchment Authority systems.

MOU

- MOU with NSW Health maintained and up to date.

Sydney Water has taken an active role in the water industry in supporting the introduction of improved water quality management systems and has based its management systems on achieving certification under ISO 9002.

The debate in the water industry has indicated that certification to ISO 9002 may not be sufficient to provide assurance on water quality. Risk management systems need to be included within the ISO 9002 framework. Sydney Water has recognised this and has been one of the first water authorities in Australia to undertake a systematic process of identifying risks to water quality and the requirements for addressing these risks. The development of management systems is a continuing process in which areas for improvement are identified and required actions implemented.

Sydney Water has excellent programs for the identification of risk and required improvement works. Overall, the focus of this work has been on identifying improvement works. There is opportunity for continued improvement with regard to: water quality management (by using the risk assessment to systematically identify the important control points); the setting of control limits for operational parameters; and the definition of management issues (such as who is responsible for monitoring, reporting and reviewing the results, and the actions required if the control limits are not complied with).

In respect of assuring the quality of the bulk raw water, Sydney Water relies on the Sydney Catchment Authority (SCA) to provide water in accordance with the Bulk Water Supply Agreement (BWSA). However, the bulk raw water quality does not, at all times, meet the requirements suggesting that there is room for improvement.

SCA also manages its systems using a risk-based approach, and Sydney Water and SCA liaise on water quality issues through the Joint Officers Group. There is an opportunity for improvement with regard to bulk water quality management by Sydney Water through the establishment of a process to confirm that SCA is carrying out the various actions and control measures necessary to achieve compliance with the BWSA.

Sydney Water is required to maintain a Memoranda of Understanding (MOU) in relation to Public Health with the NSW Department of Health (NSW Health) for the term of the Licence. The MOU with NSW Health has been amended during the audit period and is being complied with.

Protect the Environment

Water Conservation Targets

- Current program will not meet water conservation targets that may have implications on the security of supply.

Environment Plan

- High level of performance with the Environment Plan.

Environmental Indicators

- Improvement required in the monitoring, and reporting to the community, of Sydney Water's performance against the environmental indicators.

ESD Indicators

- First year of reporting against ESD indicators.
- Effective monitoring and reporting systems are in place to provide comparative reports in future years.

MOU

- MOU between Sydney Water and the EPA is out of date and requires significant improvement.

Although Sydney Water has been active in the area of water conservation and demand management, these actions are estimated to be insufficient to meet the 2004/05 or 2010/11 water conservation targets. The current program predicts that water consumption in 2004/05 will be in the vicinity of 386 litres per capita per day (some 22 litres per capita per day in excess of the conservation target). Sydney Water acknowledges in its Water Conservation and Recycling Implementation report (August, 2001) that:

"Reaching the per capita reduction targets (2004/05, 2010/11) will require either expansion of existing programs or the addition of new options".

There are opportunities to improve the programming of implementation of the water conservation strategy, improve the accuracy of measurement for demand side management and reporting in accordance with the requirements of the Licence.

One key area of non-reporting relates to the frequency and magnitude of expected supply deficiencies (Operating Licence, Section 8.2.4(b)). Defining a supply deficiency, its implications for meeting demand and developing best case and worst-case demand scenarios is a joint responsibility between the SCA and Sydney Water. SCA and Sydney Water need to work more closely together to develop and implement demand management strategies in order to avoid or postpone the construction of another major water supply dam.

Sydney Water has effective systems in place to facilitate a high level of environmental performance, monitoring and reporting. For those environmental targets due in the audit period, Sydney Water obtained a 'High compliance', having met most of the targets. In addition, Sydney Water demonstrated 'Full compliance' with the preparation and incorporation of the Environment Plan within its business planning cycle. Sydney Water also developed a list of ESD indicators, commenced monitoring and compilation of data against the indicators, and prepared a report outlining performance against each indicator to the Licence Regulator. Sydney Water demonstrated exceptional performance against some indicators while others indicated areas where environmental performance should be improved.

In relation to reporting against the Environmental Indicators, there is opportunity for significant improvement. Sydney Water argues that the needs of other stakeholders have, over the years, moulded its reporting against the Environmental Indicators to produce the report it presented to the Licence Regulator. Sydney Water emphasises variations in the monitoring program from the requirements of the Licence, have followed the recommendations of internal reviews of its monitoring program by the CSIRO and conditionally approved by the EPA.

The Auditor recognises Sydney Water's obligation to endeavour to meet the needs of all its stakeholders and its need to periodically review and refine its monitoring programs. However, this must be undertaken within the requirements of the Operating Licence. Sydney Water must monitor and compile information on the Environmental Indicators as required by the Licence and the information should be used to guide its asset management and capital works programs. The reporting format for the Environmental Indicators needs to be improved to make it clear and comprehensible to customers, similar to the format it adopts for ESD reporting.

Sydney Water appears to have complied with the required reductions in energy usage of buildings. There is however, low confidence in the reliability of the data used to report the level of compliance. Sydney Water has put in place measures to address data reliability and future reporting should be significantly more accurate. Most (96%) of Sydney Water's energy use is by operational plant (compared to buildings). Sydney Water should develop and implement programs to reduce energy use of operational plant.

The MOUs with the EPA and WAMC are out of date having received little or no amendment since the original signing in 1996. Therefore, the two MOUs reflect the responsibilities and accountabilities of EPA, WAMC and Sydney Water Corporation at 1996 and not those that applied to the audit period. The MOUs do not reflect the context of the significant legislative and operational changes that have occurred over the last five years. The MOUs should be updated to reflect the operational activities and requirements of Sydney Water and the agencies, and then be implemented to ensure "*cooperative relationships*" (required by the Licence).

Successful Business

System Performance

- Systems are well structured, documented and integrated.
- Opportunity for improvement in internal review processes to ensure asset performance is being, and can be, maintained in a sustainable manner.

Improved Alliances with Stakeholders

- Update MOUs with WAMC and EPA.
- Opportunity for improved integration of potable water risk management systems with the SCA.
- Need for improved processes for Internal Dispute Resolution and, to a lesser extent, accountability for External Dispute Resolution Schemes.

Audit Processes

- Effective reporting and documentation procedures and internal protocols are in place to facilitate the operational audit.

Social Responsibility

- Customer service, complaints and satisfaction require improved monitoring.

The overall systems, processes and procedures for the measurement and reporting of compliance for service delivery standards was found to be well documented, well structured, integrated and complied with by staff. Some improvements could be made to ensure that the reliability of the system is maintained at a high level. These improvements include the conduct of planned internal audits and maintaining comprehensive records of required and completed training in relevant processes.

Opportunities exist for improved alliances with stakeholders to ensure successful business operations. Areas where scope for improvement has been identified are listed below.

- **Update MOUs with EPA and WAMC** to establish a basis for a "*cooperative relationship*" as required by the Operating Licence and to reflect the significant legislative and operational changes that have occurred over the last five years.

- **Strengthen relationships with the SCA** in the specific areas of integration of potable water risk management systems and improved definition and management of potential supply deficiencies.
- **Improve processes and reporting of the Internal Dispute Resolution Scheme.** In operating a successful business customer satisfaction is critical. In a monopoly environment it is also one of the key indicators which can be used to evaluate whether the Corporation is meeting the needs of the customers and is not taking advantage of the lack of a market competitor for the supply of water and sewerage services. The development and formal acceptance of an updated Customer Contract, which reflects the needs of the customers, is therefore important to ensure the rights of both the customer and Sydney Water are protected. The collection and use of rigorous and reliable information about the needs, perceptions and satisfaction of the various groups which have contact with Sydney Water is a significant element of the strategic planning cycle and a mechanism to identify and rectify issues relevant to improving customer satisfaction.

Finally, Sydney Water demonstrated a high degree of preparedness to facilitate this operational audit. It has effective internal compliance protocols, procedures and tracking systems to help maintain a generally high level of compliance with its Operational Licence.

SUMMARY OF COMPLIANCE BY PARTS OF THE OPERATING LICENCE

This section of the report provides a tabular summary, by parts of the Operating Licence, of the compliance levels reached by Sydney Water in the 2000/01 audit period. **Table A** provides a summary of the assessment of compliance with each auditable requirement of the Operating Licence and Table B, a similar summary of the Ministerial Directives.

Table A: Summary of Compliance

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
MEMORANDA OF UNDERSTANDING								
3.3.1	Maintain MOUs for Licence term			✓				
3.3.2	The MOU is to form the basis for co-operative relationships between the parties				✓			
3.3.3	Not limit the persons with whom Sydney Water may have a MOU							✓
CUSTOMER AND CONSUMER RIGHTS								
5.3	Code of Practice & Procedure on Debt & Disconnection							
5.3.1	Develop a code of practice and procedure on debt and disconnection by 12 October 2000	✓						
5.3.2(a)	Provide for deferred payment or payment by instalment options for consumption bills	✓						
5.3.2(b)	Provide for the payment options referred to in (a) to be advised in consumption bills			✓				
5.3.3	Include the code of practice and procedure on debt and disconnection in its Customer Contract					✓		
5.3.4(a)	Disseminate information by placing sufficient copies with the Rental Bond Board					✓		
5.3.4(b)	Disseminate information to Customers at least once annually with their quarterly or other bills	✓						
5.3.4(c)	Disseminate information to any other person on request	✓						
WATER QUALITY								
6.2	Drinking Water Quality - Standards							
6.2.1(a)	Comply with NHRMC & ARMCANZ guidelines (1996 Guidelines)	✓						
6.2.1(b)	Comply with updates to 1996 Guidelines (Updated Guidelines) specified by NSW Health							✓
6.2.1(c)	Comply with aesthetic guideline values of 1996 Guidelines	✓						
6.2.1(d)	Comply with aesthetic guideline values of the Updated Guidelines							✓
6.2.2	Have regard to risk minimisation practices & system management of public water supplies	✓						

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
6.2.3	Commission an independent study on costs & benefits of compliance with 1996 Guidelines							✓
6.3 Drinking Water Quality – Monitoring								
6.3.1	Prepare an Annual Drinking Water Quality Monitoring Plan by 30 June 2000	✓						
6.3.2	Include system performance monitoring in Plan to ensure quality control	✓						
6.3.2(a)	Plan to include health guideline values required in 6.2.1(a) & (b)	✓						
6.3.2(b)	Plan to include aesthetic guideline values required in 6.2.1(c) & (d)	✓						
6.3.3	Monitor for aesthetic guideline values of 1996 Guidelines	✓						
6.3.4	Monitoring to assess Drinking water quality		✓					
6.3.5	Undertake drinking water quality monitoring to 30 June 2001	✓						
6.4 Drinking Water Quality - Reporting								
6.4.1	Make monitoring results made publicly available and on website	✓						
6.4.2	Produce an Annual Drinking Water Quality Report		✓					
6.4.2(a)	Report to use health guideline values required in 6.2.1(a) & (b)		✓					
6.4.2(b)	Report to use aesthetic guideline values required in 6.2.1(c) & (d)		✓					
6.4.2(c)	Report to use aesthetic guideline values of 1996 Guidelines for Physical Characteristics		✓					
6.4.3	Include a summary of monitoring information, problems and system failures		✓					
6.4.4	Prepare a report by 30 November annually and make publicly available	✓						
6.5 Drinking Water – Planning								
6.5.1	Prepare a 5 year Drinking Water Quality Management Plan before 12 September 2000	✓						
6.5.2	Include Management Strategies in Plan	✓						
6.5.3	Prepare an Annual Drinking Water Quality Improvement Plan for water supply system	✓						
6.5.4	Plan to incorporate system and operational changes		✓					
6.5.5	Review Plan as part of Mid-term review in 2.3.1							✓
6.5.6	Prepare a Drinking Water Incident Management Plan by 12 May 2000	✓						
6.5.7	Plan to contain procedures and protocols for managing incidents	✓						

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
6.6	Environmental Water Quality							
6.6	Meet environmental water quality requirements for discharges		✓					
6.7	Other Grades of Water							
6.7.1	Supply Other grades of water according to relevant guidelines		✓					
6.7.2	Identify minimum standards to regulate supply of other grades of water in Mid term review							✓
6.7.3	Minister to resolve any conflict							✓
SYSTEM PERFORMANCE								
7.1	Compliance with Performance Standards							
7.1.1	Comply with standards for continuity, water pressure and sewerage overflows in Schedule 4	✓						
7.2	Standards in Respect of Low Pressure Areas							
7.2.1(a)	Develop standards for minimum level of water pressure required in Blue Mountains	✓						
7.2.1(b)	Develop standards for minimum level of water pressure required in non-urban areas	✓						
7.2.2	Comply with standards developed in 7.2 (or those determined by the Minister in 7.3)		✓					
WATER CONSERVATION AND DEMAND MANAGEMENT								
8.1	Water Conservation Target							
8.1.1(a)	Take action to reduce water quantity from all sources to 364L/day/capita by 2004/5				✓			
8.1.1(b)	Take action to reduce water quantity from all sources to 329L/day/capita by 2010/11				✓			
8.1.1(c)	Mid term review to specify reduction target for 2014/15				✓			
8.2	Demand Management Strategy							
8.2.1	Definition of Demand Management Strategy							✓
8.2.2	Consider demand side management for planning future services	✓						
8.2.3	Provide Demand Management Strategy Implementation Report by 1 September 2001	✓						
8.2.4(a)	Report to estimate past, current and projected water uses and distinguish users		✓					
8.2.4(b)	Report to describe supply deficiencies				✓			
8.2.4(c)	Report to identify conservation measures	✓						
8.2.4(d)	Report to describe, cost and evaluate additional conservation measures			✓				

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
8.2.4(e)	Report to describe future plans for water reclamation & strategies to alter water use practices	✓						
8.2.4(f)	Report to evaluate cost of plans and alternatives					✓		
8.2.4(g)	Report to prioritise and schedule the implementation of courses of action			✓				
8.2.4(h)	Report to identify strategies for reducing unaccounted water losses	✓						
8.2.5	Engage third party to verify mathematical models for future water demand	✓						
8.3 Reducing Discharges								
8.3.1	Take action to implement non-potable reuse of effluent			✓				
8.4 Water Conservation Rating and Labelling								
8.4.1	Encourage manufacturers to improve water use efficiency of appliances		✓					
ENVIRONMENT – INDICATORS & PLANS								
9.1 Environmental Indicators								
9.1.1	Monitor and compile data on indicators of impact on environment	✓						
9.1.2	Use indicators in accord with those published in Government Gazette 15 December 1995			✓				
9.1.3	Report to IPART on performance in relation to indicators by 1 September 2000			✓				
9.1.4	Report to enable a year to year comparison				✓			
9.1.5	Report to be made publicly available within one month of receipt by Licence Regulator					✓		
9.1.6	Indicators in 9.1.2 to be reviewed in End of term review							✓
9.2 Ecologically Sustainable Development Indicators								
9.2.1	Develop measures to indicate the degree to which its activities / services comply with ESD principles	✓						
9.2.2	Develop a draft list of ESD Indicators by 12 May 2000	✓						
9.2.3	The draft list must undergo public consultation.	✓						
9.2.4	Present a final list of ESD Indicators to the Minister for approval within 3 months of 9.2.3	✓						
9.2.5	Monitor and compile of data on ESD indicators by 1 July 2000	✓						
9.2.6	Report to IPART on performance in relation to ESD indicators by 1 September 2000	✓						

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
9.2.7	Make yearly report available to the public within one month of receipt by Licence Regulator					✓		
9.2.8	The ESD indicators in clause 9.2.4 are to be reviewed as part of the End of term review							✓
9.3 Environment Plan								
9.3.1	Produce 5 year Environment Plan by 30 September 2000	✓						
9.3.2	Engage public consultation in developing the Plan	✓						
9.3.3(a)	Plan to contain water, waste water and stormwater strategies and environmental aspects of other activities	✓						
9.3.3(b)	Plan to endorse ESD principles	✓						
9.3.3(c)	Plan to be recognised in business plans	✓						
9.3.4	Plan must set targets & time tables for compliance over term of Plan	✓						
9.3.5	Make Plan publicly available and on website	✓						
9.3.6	Compile report detailing progress in meeting Plan and complying with targets and timetables			✓				
9.3.7	Amendments to Plan made only after public consultation							✓
9.4 Energy Management								
9.4.1	Energy Management Policy							✓
9.4.2	Adopt energy consumption targets in the Energy Management Policy	✓						
9.4.2(a)	Targets in Policy to reduce consumption in buildings to 15% of 1995 level by 2001						✓	
9.4.2(b)	Targets in Policy to reduce consumption in buildings to 25% of 1995 level by 2005							✓
9.4.2(c)	Targets in Policy to reduce consumption to any subsequent targets set by Policy							✓
9.4.3	Report to licence regulator on performance in relation to Clause 9.4.2 by 1 September 2000	✓						
9.5 Botany Wetlands								
9.5.1	Definition of Botany Wetlands Plan							✓
9.5.2	Implement Plan in conjunction with appropriate persons	✓						
9.5.3	Report annually to IPART on compliance with Plan	✓						
9.5.4	Prior to end of term review, review Plan in consultation with EPA, DLWC, NPWS etc.	✓						
9.7 Trade Waste								
9.7.1	Prepare trade waste policy & management plan		✓					

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
9.7.2	Report to IPART on progress on objectives and indicators under Clause 9.7.1 by 1 September 2000	✓						
DISPUTE RESOLUTION SCHEME								
12.1 Internal Dispute Resolution Process								
12.1.1	Establish internal complaints handling procedures	✓						
12.1.2	Base internal complaints handling procedures for customer and consumer complaints on AS4269-1995			✓				
12.1.3	Make information on procedures publicly available	✓						
12.1.4	Provide information in 12.1.3 through customer bills at least annually	✓						
12.1.5	Complaint process to be reviewed and amended where necessary to AS4269			✓				
12.1.6	Report each year to the Licence Regulator concerning complaints on the following:			✓				
12.1.6(a)	• number & type of complaints each month in each suburb			✓				
12.1.6(b)	• number & type of complaints & how well each was handled			✓				
12.1.6(c)	• any systemic problems			✓				
12.2 External Dispute Resolution Scheme								
12.2.1	Establish Dispute Resolution Scheme for customers and consumers by 12 May 2000	✓						
12.2.2	Scheme subject to Minister's approval	✓						
12.2.3	Dispute Resolution Body to handle complaints	✓						
12.2.4	Scheme to comply with minimum standards as in Benchmarks for Industry based Consumer Dispute Resolution Schemes	✓						
12.2.5(a)	Scheme be independent of Sydney Water	✓						
12.2.5(b)	Sydney Water to abide by decisions of Body	✓						
12.2.5(c)	Scheme must discourage legalistic adversarial approach	✓						
12.2.5(d)	Decisions of Body to be fair		✓					
12.2.5(e)	Scheme to operate efficiently by keeping track of disputes		✓					
12.2.5(f)	Scheme to be free of cost to customers	✓						
12.2.6	Prepare pamphlet to explain Scheme	✓						
12.2.7	Provide pamphlet to customers through bills	✓						
12.2.8	Provide reports to IPART on determinations of Body							✓

Licence Clause	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
12.2.9(a)	Produce annual report to IPART on Dispute Resolution Scheme on:	✓						
12.2.9(b)	• number and types of complaints received by Body	✓						
12.2.9(c)	• outcome of complaints	✓						
12.2.9(d)	• time taken to resolve complaints	✓						
12.2.9(e)	• procedure for resolving complaints	✓						
12.2.9(f)	• systemic problems arising from complaints	✓						
12.2.9(g)	• other information required by IPART							✓
12.2.10	Make report in 12.2.9 publicly available	✓						
12.3 Complaints to Other Bodies								
12.3(a)	Report to IPART on number & type of complaints made to a court or tribunal by 1 September 2000	✓						
12.3(b)	Report on outcome of these complaints	✓						
12.3(c)	Report on how complaints were resolved	✓						
12.3(d)	Report on systemic problems arising from complaints							✓
12.3(e)	Report on other information required by IPART							✓

Table B provides a summary of the compliance Levels reached by Sydney water with the Ministerial Directives.

Table B: Ministerial Directives

Directive No.	Summary of Requirement	Full Compliance	High Compliance	Partial Compliance	Low Compliance	Non-Compliance	Insufficient Information	No requirement
DRINKING WATER QUALITY								
M1	Report status of implementation of Improvement Plan by 30 June 2001	✓						
PROVISION OF SEWERAGE SERVICES								
M2	Progress a reduction in the number of unsewered properties		✓					
INDEPENDENT VALIDATION OF TESTING METHODOLOGY								
M3	Update the meaning of term "independent validation" by 31 December 2000	✓						
M4	Retain NATA accreditation of AWT's laboratory	✓						
M5	Provide information from NATA relating to AWT's methodology and processes by 31 December 2000	✓						
TREND IN SEWAGE TREATMENT PLANT ODOURS								
M6	Achieve a downward trend in odour complaints	✓						
CUSTOMER COUNCIL CONSULTATION								
M7	Develop measures for effective consultation in consultation with Customer Councils	✓						
COMMUNITY CONSULTATION								
M8	Develop and deploy guidelines and training in effective community consultation and report by 31 December 2000		✓					
ASSET MANAGEMENT								
M9	Report on strategic framework for asset management		✓					
POTABLE WATER BACKFLOW PREVENTION DEVICES								
M10	Provide six monthly reports on progress of backflow prevention	✓						
CUSTOMER SERVICE								
M11	Develop performance measures for customer service and satisfaction	✓						
M12(a)	Enter into discussions with IPART to negotiate adoption of measures for audit purposes	✓						
M12(b)	Place audit and six monthly report on Sydney Water website							✓
M13	Resolve potential misunderstanding before the commencement of the next audit	✓						

SUMMARY OF KEY RECOMMENDATIONS

The **key recommendations** of the 2000/01 Operational Audit are presented below and grouped by the audited parts of the Operating Licence. The recommendations are made to provide Sydney Water with a basis for continued improvement and are numbered to reflect the relevant audited parts of the Licence.

Additionally, **secondary recommendations** are presented in the body of this report. Sydney Water is encouraged to give due consideration to those recommendations and facilitate improved performance and compliance for subsequent audit periods.

It is recommended that Sydney Water:

MEMORANDA OF UNDERSTANDING

R3.1 Amend the existing Memoranda of Understanding with the EPA and the WAMC, through agreement at CEO level, by the 30 June 2002 to reflect the legislative and operational changes since 1996 and to form the basis of “*co-operative relationships*”.

CUSTOMERS

R5.1 Ensure that the Customer Contract is revised in accord with the Sydney Water 2000-2004 Operating Licence.

R5.2 Ensure that specific customer service and satisfaction measures are identified for the key clauses of the Customer Contract. Performance measures should be used to assess compliance with the Customer Contract including:

- The performance measures approved by the Minister;
- The measures utilised in the annual customer survey undertaken by Sydney Water; and
- The assessments undertaken by Customer Councils.

R5.3 Improve the monitoring of performance against the Customer Contract through:

- Development of a formal customer survey research program based around the requirements of the Customer Contract.
- Use of the Customer Councils as a mechanism to evaluate Sydney Water’s compliance with the Customer Contract. Each Customer Council should prepare a formal report as part of their annual program of work that assesses Sydney Water’s performance against the Customer Contract, and this report should be provided to the Licence Regulator as part of the Annual Audit. This review should be chaired by a non-Sydney Water member.
- Investigation, in association with IPART and other License Regulators throughout Australia, the potential to develop a uniform suite of customer satisfaction measures which can be utilised as benchmarks for the evaluation of the performance of water utilities. This would allow not only the assessment of individual utilities through time but also permit comparison of performance. These performance measures should be included in the ongoing customer survey program undertaken by Sydney Water and reported annually as part of the audit process.
- Alignment of the customer research program with infrastructure catchments to allow the results to be used as a diagnostic and performance review tool for systems.

WATER QUALITY

- R6.1 Review the basis for water quality sampling and reporting with NSW Health to ensure that the program provides adequate confirmation of compliance on a local area basis and is in accordance with the 1996 Guidelines.
- R6.2 Clarify, with IPART, as to the detail required for the purposes of the Annual Report with regard to water quality incidents and events.
- R6.3 Establish a process to confirm that Sydney Catchment Authority (SCA) is carrying out the various actions and control measures necessary to achieve compliance with the Bulk Water Supply Agreement (BWSA).

SYSTEM PERFORMANCE

- R7.1 Develop and seek IPART's agreement to a definition of "*properties connected*" to either the water or sewerage system, under Schedule 4 of the Licence.
- R7.2 Clarify, in the Review of System Performance Standards, the term "*Connected properties currently unoccupied shall be included*" for both Water Continuity and Pressure standards, and "*Private property currently unoccupied shall be included*" for the Sewage Overflows standard.
- R7.3 Review its asset management and performance standards to ensure that asset performance is being, and can be, maintained in a sustainable manner. Such systems include:
- appropriate asset management framework, plans and programs;
 - adequate asset and historical performance information;
 - adequate predictive capability for long term asset performance and impact on service levels;
 - risk management and decision-making processes which take into account social, environmental and economic criteria;
 - options identification which provides for a range of appropriate treatments to meet a need, that is, including non-capital options; and
 - lifecycle cost assessment.

WATER CONSERVATION AND DEMAND MANAGEMENT

- R8.1 Review its existing Water Conservation and Re-Use programs to meet the per capita reduction targets (2004/05, 2010/11), by either expansion of existing programs or the addition of new options. The scoring process against all criteria used by Sydney Water to select new programs and stop poor performing programs should also be made clearer and independently reviewed.
- R8.2 Improve validation of Impacts of Water Conservation and Reuse measures by defining change in Minimum Night Flows attributed to leakage reduction and using independently audited statistical measures similar to those used to validate impacts of Every Drop Counts (EDC) retrofits. Also, Sydney Water may provide evidence that validates its estimates of assigned leak rates.
- R8.3 In its comparison of "actual" compared to "projected (after demand management)" annual per capita demands, adjust for (include or remove) the effects of "climate" for both the actual and projected figures and show 95% confidence levels, or similar, to validate progress towards targets for 2005 and 2011.
- R8.4 Establish a separate estimate for projected water use for the Government sector.

- R8.5 Determine, in association with the Sydney Catchment Authority, the impact of demand management activities on supply deficiency analysis, particularly in terms of best and worst case scenarios of implementing restrictions during drought and for variation with climate for both annual and monthly demand patterns and document in the Report.

ENVIRONMENT – INDICATORS AND PLANS

- R9.1 Make available to the public the yearly reports on its performance against the Environmental Indicators, ESD Indicators and Environment Plan in accordance with the time requirements of the Licence.
- R9.2 Monitor and compile information for all the environmental indicators and prepares a more readily understandable and comprehensive report of its performance against each environmental indicator, as required by the Licence.
- R9.3 Provide and interpret performance information for the environmental indicators over at least the previous 10 years, where comparable data are available.
- R9.4 Ensure future reports provided under clause 9.4.3 include information on individual energy use figures for all buildings used to derive the percentage reduction.

DISPUTE RESOLUTION

- R12.1 Undertake a sample survey of complainants in regard to its internal dispute resolution process, on a regular basis to assess customer satisfaction with the process used to resolve their complaint. The survey should pay particular attention to an assessment against the key elements of AS 4269-1995.
- R12.2 Implement recommendations contained in the Sydney Water report dated June 2001 (*Sydney Water Customer Complaints Policy and Procedure Review*) regarding internal dispute resolution.
- R12.3 Determine and report upon the internal dispute resolution scheme including:
- disputes by relevant water and/or sewerage systems, by suburbs, to allow assessment of problems of a systemic nature;
 - problems of a systemic nature which are identified by the complaint data and the response to be undertaken by Sydney Water;
 - the impact of population and/or property density on complaint reporting;
 - any amendments needed in the Operating Licence to reflect the appropriate geographic unit (as indicated above) for analysis and reporting; and
 - a summary report on any complaints older than 50 days that are unresolved at the 30 June each year.
- R12.4 Request an annual report from EWON that covers:
- an analysis of complaints by infrastructure system (such as water systems or sewage catchment) for consideration as part of the annual audit of Sydney Water;
 - any complaints/contacts that have been referred to any other bodies, for consideration as part of the annual audit of Sydney Water;
 - any complaints considered outside the EWON jurisdiction because of the financial restrictions in the EWON constitution;

- any complaints/contacts that are still being considered by EWON as of 30 June for consideration as part of the annual audit of Sydney Water; and
- any issues relevant to the specific clauses of the Sydney Water Operating Licence regarding dispute resolution (such as 12.2.4; 12.2.5(d) and 12.2.5(e)).

1. INTRODUCTION AND OBJECTIVES

1.1 THE SYDNEY WATER CORPORATION

Sydney Water Corporation (Sydney Water) is a State Owned Corporation, wholly owned by the NSW Government. The roles and responsibilities of Sydney Water derive from the *Sydney Water Act 1994* (the Act) and the Operating Licence issued pursuant to Part 5 of the Act. In accordance with the Act, the NSW Government granted an Operating Licence to Sydney Water in 1995. At the end of 1999, the Licence Regulator recommended to the Government various terms and conditions to amend the Operating Licence for Sydney Water. The current Operating Licence was developed by IPART and commenced on 12 April 2000 for a 5-year term.

The Operating Licence enables Sydney Water to provide, construct, operate, manage and maintain systems and services (in accordance with the Act) for:

- a) supplying water;
- b) providing sewerage services;
- c) providing stormwater drainage systems, and
- d) disposing of wastewater.

Throughout its Area of Operations, Sydney Water provides services to approximately 4 million customers within the areas of Sydney, the Blue Mountains and Illawarra Regions. The area of operations for which Sydney Water is responsible is shown in **Figure 1.1**. A schematic representation of the major infrastructure under the control of Sydney Water is shown in **Figure 1.2**.

1.2 INDEPENDENT PRICING AND REGULATORY TRIBUNAL

The Independent Pricing and Regulatory Tribunal (IPART) was established in 1992 to regulate the pricing of monopoly services. On 1 November 2000 the NSW Government initiated the *Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act*, which, under Schedule 1, transferred Licence auditing and other regulatory responsibilities for the three metropolitan water authorities (Sydney Water, Hunter Water and the Sydney Catchment Authority) to IPART.

1.3 SCOPE OF OPERATIONAL AUDIT

The audit of the Operating Licence for Sydney Water (and the extent of this report) covers the period 1 January 2000 to 30 June 2001 recognising that the current Licence commenced on 12 April 2000. The audit follows the structure of the Licence with any additional matter, stemming from the previous Licence, being reported, where required, separately.

The scope of the audit is defined in Part 10 of the Operating Licence and broadly includes assessment of compliance against the Parts of the Licence as outlined in **Table 1.1**.

The scope of the audit also includes assessment of compliance against the directives of the Minister responsible for Sydney Water resulting from the Operational Audit 1999/00 and the identification of factors that have, or may, influence Sydney Water's compliance in future years.

The full audit brief is contained in **Appendix A**. The Operating Licence and the Ministerial Directives are provided in **Appendix B** and **Appendix C** respectively.

Table 1.1: Scope of the 2000/01 Audit

Licence Part - Key Area		General Requirements	Report Section
Part 3	Sydney Water's Responsibilities	Memoranda of Understanding with the Department of Health, the Environment Protection Authority and the Water Administration Ministerial Corporation.	Section 4
Part 5	Customer and Consumer Rights	Customer Contract; Code of Practice and procedures on debt and disconnection; and Customer Councils	Section 5
Part 6	Water Quality	Drinking water quality standards, monitoring and reporting; drinking water planning; environmental water quality; and other grades of water.	Section 6
Part 7	System Performance	Compliance with performance standards; standards in respect to low pressure areas; review of performance standards; keeping of records of discontinuity, low pressure and sewage overflow; and annual reporting on compliance with performance standards.	Section 7
Part 8	Water Conservation and Demand Management	Water conservation targets; demand management strategy; reducing discharges; and water conservation rating and labelling.	Section 8
Part 9	Environment – Indicators and Plans	Environmental indicators; ecologically sustainable development indicators; environment plan; energy management; Botany Wetlands; pollution reduction targets; and trade waste.	Section 9
Part 10	Operational Audits of the Licence	Commission of audits; what the audit is to report on; reporting of audit; additional audits; and provision of information.	NA
Part 12	Dispute Resolution Scheme	Internal dispute resolution process; external dispute resolution scheme; and complaints to other bodies.	Section 10

1.4 STRUCTURE OF THE AUDIT REPORT

This 2000/01 Operational Audit report has been presented in plain English and in a format that provides detail directed at different levels of readership and detail to provide an understanding of Sydney Water's operations and its compliance with specific statutory requirements.

The audit report has been specifically prepared to meet the audit brief and Part 10 of the Operating Licence. The findings of the report are not presented in a "prioritised order" or "order of significance". Rather, the report is designed to follow the structure of the Operating Licence. The report is structured in compliance sections that correspond to the key areas (parts) of the Operating Licence (see **Table 1.1** above). Each compliance section of the report provides the following for each key area:

- a *compliance summary* at the beginning of each section addressing the principal compliances and any non-compliances relevant to each area of the audit;
- a *requirements summary* for each section placing in context and summarising the requirements of the Operating Licence against which the performance of Sydney Water is assessed;
- *substantive evidence and findings* for each section that support the assessments of compliance and are presented in compliance tables breaking each auditable requirement into sub-clauses and includes:

- a statement describing the *level of compliance* with the Licence condition; and
- a detailed appraisal of the *findings* of the audit based on the evidence provided.

There are up to three compliance tables in each section:

- The first table presents **compliance under Part 10 of the Licence** for the key area;
- The second table presents **compliance with the relevant Part of the Licence** for the key area; and
- The third table presents the assessment of **compliance with any Ministerial Directives** for the key area.

This is followed by:

- a **discussion** or expansion of compliance comments for each key area when required;
- **factors affecting compliance** for each key area; and
- **recommendations** for each key area.

As the specific requirements of Part 10 of the Operating Licence and the Ministerial Directives are reported in the relevant key areas, **Table 1.2** and **Table 1.3** provide guidance on where these are addressed in this report.

Table 1.2: Requirements of Part 10 of the Operating Licence

Part 10 of the Operating Licence		Report Table
10.2.1 The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:		
(a)	on-going compliance by Sydney Water with its <i>Customer Contract</i> and specific areas of non-compliance	Table 5.1
(b)	Sydney Water's compliance with its <i>Code of Practice and Procedure on Debt and Disconnection</i> under clause 5.3.2 and any similar initiatives developed by Sydney Water	Table 5.1
(c)	Compliance by Sydney Water with its obligations under Part 6 (<i>Water Quality</i>) of this Licence	Table 6.1
(d)	Compliance by Sydney Water with the performance standards under clauses 7.1 (<i>Compliance with Performance Standards</i>) and 7.2 (<i>Standards in respect of Low Pressure Areas</i>)	Table 7.1
(e)	Compliance by Sydney Water with the <i>water conservation targets</i> under clause 8.1.1	Table 8.1
(f)	Sydney Water's performance in relation to implementation of the <i>Demand Management Strategy</i> under clause 8.2	Table 8.1
(g)	Progress by Sydney Water in meeting the <i>Reuse Target</i> required under clause 8.3.1	Table 8.1
(h)	Progress by Sydney Water in relation to the implementation of the <i>National Water Conservation Rating and Labelling Scheme</i> under clause 8.4.1	Table 8.1
(i)	Sydney Water's performance in relation to the <i>Environment Indicators</i> under clause 9.1	Table 9.1

(j)	Sydney Water's performance in relation to the <i>ESD Indicators</i> compiled under clause 9.2.5	Table 9.1
(k)	Compliance by Sydney Water with the <i>Environment Plan</i> under clause 9.3	Table 9.1
(l)	Compliance by Sydney Water with the targets in the <i>Energy Management Policy for Energy Consumption of Buildings</i> in clause 9.4.2	Table 9.1
(m)	Compliance by Sydney Water with the <i>Botany Wetlands Plan</i> under clause 9.5	Table 9.1
(n)	Compliance by Sydney Water with the <i>Trade Waste</i> objectives and performance indicators under clause 9.7	Table 9.1
(o)	The effectiveness of Sydney Water's <i>Internal Dispute Resolution scheme</i> under clause 12.1	Table 10.1
(p)	The effectiveness of Sydney Water's <i>External Dispute Resolution scheme</i> under clause 12.2	Table 10.1
(q)	Complaints made against Sydney Water to a court or tribunal under clause 12.3 (<i>Complaints by other Bodies</i>).	Table 10.1
(r)	Any other matter required by this Licence or the Act to be assessed or considered as part of the Annual Audit, eg; <i>Ministerial Directives</i> .	See Table 1.3
10.2.2 Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual Audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the DLWC and the relevant agency has undertaken an investigation of that matter. However, the Licence Regulator may, as part of the Annual Audit:		
(a)	Report on Sydney Water's implementation of any Memorandum of Understanding referred to in clause 3.3.1.	Table 4.1

Table 1.3: Ministerial Directives

Ministerial Directive		Report Table
M1	"...I require a status report on the implementation of those actions (proposed in the Improvement Plan to ensure the maintenance of drinking water quality at North Richmond) by the conclusion of the 2000 Annual Drinking Water Quality Improvement Plan period (30 June 2001)."	Table 6.3
M2	"...to ensure that I remain fully apprised of Sydney Water's progress in reducing the number of unsewered properties, with due consideration to community requirements, environment and public health requirements, I look forward to regular progress reports on this matter."	Table 7.3
M3	"...I note that there is a difference of opinion between the auditor and AWT as to the meaning of the term "independent validation" and how the process of independent validation should be pursued. So that I may be apprised of developments in this scientific debate, I require regular updates. The first of these updates is to be provided by 31 December 2000. If there is a significant shift in the scientific community I expect to be informed immediately..."	Table 6.3
M4	"...I require AWT's laboratory to continue to satisfy the NATA requirements to retain accreditation."	Table 6.3
M5	"...I require Sydney Water to seek information from NATA in relation to AWT's methodology and processes and provide me with this information by 31 December 2000."	Table 6.3

M6	"...I expect the next audit to report a downward trend in odour complaints at these facilities."	Table 10.3
M7	"...I require Sydney Water to develop appropriate measures for effective consultation in conjunction with Customer Councils and then enter into discussions with IPART to negotiate their adoption for audit purposes. I require negotiations with IPART to commence by the end of March 2001."	Table 10.3
M8	"...I require Sydney Water to develop and deploy guidelines and training in effective community consultation. I also require a report by 31 December 2000 on what mechanisms have been put in place to ensure effective community consultation."	Table 10.3
M9	"...I require a report on Sydney Water's strategic framework of asset management. This report is to cover the main components of Sydney Water's asset planning and decision making process, taking into account reviews of system performance standards. The report will also address deployment of this strategy throughout Sydney Water's operations, maintenance and asset creation plans."	Table 7.3
M10	"...I require six monthly reports on the progress of the Backflow Prevention program. The reports are to be provided to me at the same time as the regular Operating Licence Compliance reports."	Table 6.3
M11	"...I require the Corporation to develop a suite of performance measures relating to customer service and satisfaction..."	Table 5.3
M12	"...I further require Sydney Water to enter into discussions with IPART to negotiate the adoption of the measures for audit purposes. I require negotiations with IPART to commence by the end of March 2001 with the measures placed on the Sydney Water website within one month of their finalisation and performance reported on that site at least six monthly."	Table 5.3
M13	"Whilst there have been improvements in the conduct of the audit and the relationship between the auditors and Sydney Water in recent years, I note that in dealing with the issue of independent validation, of AWT's testing methodology, there were some instances where this standard was not maintained. In this respect, protocols for minimising any potential misunderstanding between parties should be resolved before the commencement of the next audit."	Section 2.3

AREA OF OPERATIONS

SYDNEY WATER CORPORATION OPERATIONAL AUDIT 2000/01



Source: Sydney Water Corporation

Date : 10 January 2002

File Name : VA0491_01.cdr

egis

Figure 1.1

SYDNEY WATER CORPORATION OPERATIONAL AUDIT 2000/01



File Name : VA0491_02.cdr

Figure 1.2

2. AUDIT METHODOLOGY

2.1 STANDARDS

To meet the specific requirements of IPART, the Operational Audit was undertaken adopting a methodology consistent with ISO14011. ISO 14011 "*Guidelines for Environmental Auditing*" provides a *systematic approach* to defining the requirements of the audit, planning, interpreting licence conditions, collecting audit evidence, objectively assessing the evidence, and reporting in a clear and accurate manner. It also ensures that the audit has been conducted in accordance with an established and recognised audit protocol.

2.2 AUDIT PREPARATION

Brief descriptions and dates for key audit activities are described below.

Draft Audit Plan

To ensure that the audit requirements outlined in the Licence and the brief were addressed, the scope of the audit was confirmed with IPART and a draft audit plan prepared.

Inception Meetings

Following the preparation of the draft audit plan, meetings with IPART representatives and Sydney Water were held on 5 September 2001 and the 17 September 2001, respectively. The primary objective of these meetings was to develop working relationships, mutual understandings and expectations relating to the requirements and process of the audit. The meeting also enabled Sydney Water to present an organisational background and its overview of compliance.

Audit Tests

Specific audit tests were developed for all requirements within the scope of the audit. These tests were designed to define *substantive compliance* with the Licence requirements as well as to *identify factors that have, or may impact on performance in the future*. Development and conduct of the audit tests was achieved by:

- dissecting each Licence condition or other requirement into elements;
- interpreting (and documenting the interpretation of) each element;
- assembling evidence to assess levels of compliance for each element;
- identifying the factors that have affected, or may affect compliance (within the risk framework); and
- identifying the measures to determine Sydney Water's performance against those factors.

The above tasks were collated into the audit tests that were provided to Sydney Water prior to the audit interviews wherever practicable.

The audit tests also assessed the application of underlying procedures that Sydney Water has in place relevant to the requirements. The purpose was to verify that the underlying management processes within Sydney Water are sound and that there is confidence that work is carried out systematically and in accordance with internal procedures.

2.3 CONDUCT OF THE AUDIT

A Ministerial Directive (M13) from the 99/00 operational audit noted the improved nature of the relationship between Sydney Water and the auditor, vis:

"Whilst there have been improvements in the conduct of the audit and the relationship between the auditors and Sydney Water in recent years, I note that in dealing with the issue of independent validation of AWT's testing methodology, there were some instances where this standard was not maintained. In this respect, protocols for minimising any potential misunderstanding between parties should be resolved before the commencement of the next audit."

To ensure a positive relationship, audit protocols were established at the inception meeting between the Auditor and Sydney Water representatives. The protocols were designed to ensure efficient and transparent information transfer and foster an open and professional working relationship between all parties.

Both Sydney Water and the Auditor closely adhered to the established protocols. Sydney Water fully complied with the Minister's requirement during the 2001 audit.

2.4 AUDIT INTERVIEWS

The relevant specialist team auditors conducted the first and second round interviews against the audit tests on the dates shown in **Table 2.1**. Second round interviews allowed information requested in advance to be explained and presented in person by Sydney Water and provided another opportunity for detailed examination and additional questioning.

Table 2.1: Interview Program

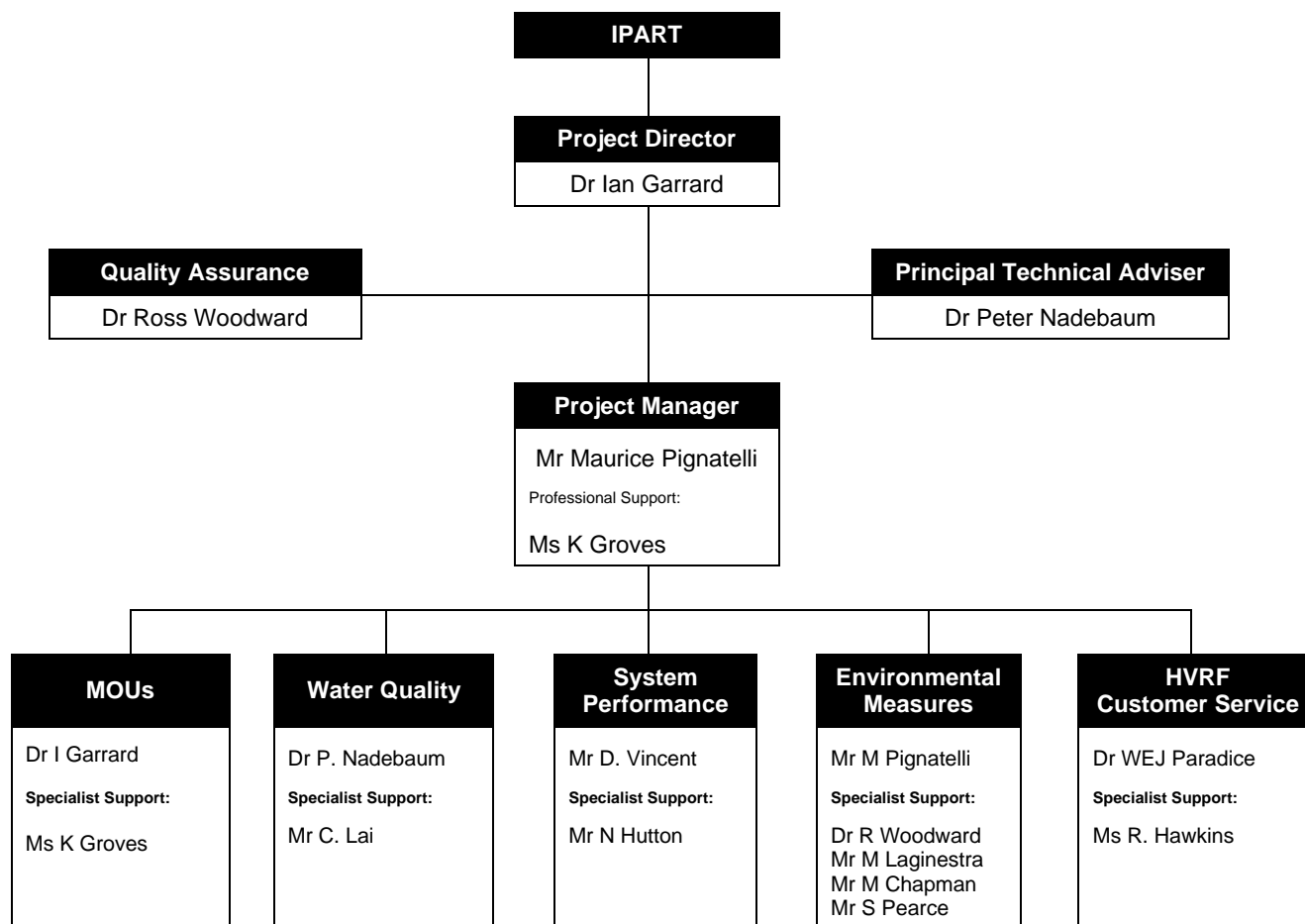
Licence Part or Ministerial Directive	Sydney Water Representatives	Egis/HVRF Representatives	Interview Dates
3.3.1	Richard Birrell (Health) Kaia Hodge (EPA) Gavin Morrison (WAMC)	Ian Garrard Kate Groves	3 October 2001 16 October 2001
	Visit to Liverpool Call Centre	WEJ Paradise	4 October 2001
7.1 (Overview and Surcharge sessions)	Lionel Harris Peter Fisher	Don Vincent Neville Hutton	4 October 2001
M8 - Community Consultation	John Parker	WEJ Paradise	4 October 2001
M7 - Customer Council Consultation	Jane Partridge	WEJ Paradise	4 October 2001
M9 - Asset Management Framework	Judith Meeske	Don Vincent Neville Hutton	4 October 2001
M2 - Provision of sewer services	Gary Bickford	Don Vincent Neville Hutton	5 October 2001
9.5	Robin Sim	Ian Garrard Kate Groves	5 October 2001

Licence Part or Ministerial Directive	Sydney Water Representatives	Egis/HVRF Representatives	Interview Dates
7.2 & 7.1-Pressure and Continuity Sessions	Eric De Rooy	Don Vincent Neville Hutton	5 October 2001
7.1 - Overview of data flow in WAMS	I Watts	Don Vincent Neville Hutton	5 October 2001
6.7	Alan Gregory Carol Howe	Peter Nadebaum Calvin Lai	8 October 2001
6.2, 6.3, 6.4, 6.5	Eric De Rooy Phil Broad Len Rogerson Steve Inkster	Peter Nadebaum Calvin Lai	9 October 2001
8.1, 8.2, 8.3, 8.4	Alan Gregory	Maurice Pignatelli Michael Chapman	9 October 2001 12 November 2001
9.4	John Petre	Ross Woodward Simon Pearce	9 October 2001
M3, M4, M5 - Validation of Testing methodology	Colin Nicholson Eric De Rooy	Peter Nadebaum	9 October 2001
Customer Contract	Colin Ridley Marina Melnikoff Paul Scully	WEJ Paradise	10 October 2001
9.2	Kaia Hodge	Ross Woodward Simon Pearce	12 October 2001
9.3	Heidi Parkes Kaia Hodge	Ross Woodward Simon Pearce	12 October 2001
M6 - STP odour complaints	Emma Cooper Peter Donnelly	WEJ Paradise	12 October 2001
12.1, 12.3, M11, M12 – Customer Service	Peter Donnelly		
12.2, 5.3.1 & 5.3.2	Colin Ridley		
9.1	Anthony Duchatel	Ross Woodward	18 October 2001
6.6	Anthony Duchatel	Maurice Pignatelli	18 October 2001
7	Linda Cox, Kevin Ware & Greg Bourke (Ryde Depot)	Neville Hutton	18 October 2001
9.7 & M10 - Backflow Prevention Devices	John Nieuwland	Maurice Pignatelli Mitchell Laginestra	26 October 2001

2.5 AUDIT TEAM

The audit team consisted of specialist Auditors from Egis Consulting Australia (Egis) and Hunter Valley Research Foundation (HVRF). The audit was coordinated by the Project Manager calling on the expertise of the team members for the auditing of key areas as shown below in **Figure 2.1**.

Figure 2.1: Structure and Responsibility of the Audit Team



3. REGULATORY REGIME

3.1 INTRODUCTION

Sydney Water has the primary role of managing potable water supply and sewerage treatment (including assets) to protect public health and the environment for the benefit of Sydney and surrounding urban areas. These roles and responsibilities of Sydney Water are derived from the Sydney Water Act 1994 and the Operating Licence issued pursuant to Part 5 of the Act.

The NSW Government in 1995 granted the Operating Licence to Sydney Water. At the end of 1999, the Licence Regulator recommended to the Government various terms and conditions to amend the Operating Licence for Sydney Water. The Licence was amended by IPART and renewed on 1 January 2000 for a five-year term though did not commence until 12 April 2000.

The Act establishes a set of sub-ordinate statutory instruments namely: the Operating Licence; Memoranda of Understanding (MOUs) with regulatory agencies; and a Customer Contract. Such instruments impose compliance requirements upon Sydney Water, which are measurable and can therefore be audited.

A brief description of the major components of the regulatory framework within which Sydney Water operates is presented below.

3.2 SYDNEY WATER ACT 1994

Under Section 21 of the Act, the principal objectives of Sydney Water are as follows:

- *To be a successful business and to this end operate at least as efficiently as any comparable businesses, maximise the net worth of the State's investment in the Corporation, and exhibit a sense of social responsibility by having regard to the interests of the community in which it operates;*
- *To protect the environment by conducting its operations in compliance with the principles of ecologically sustainable development contained in section 6(2) of the Protection of the Environment Administration Act, 1991; and*
- *To protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of any operating licence.*

In addition, Sydney Water has special objectives under section 22(1) regarding reduction of risks to human health and preventing the degradation of the environment.

The Act also establishes the provisions listed in **Table 3.1**.

Table 3.1: Provisions of the Sydney Water Act, 1994 - Relating to the Audit

• the Sydney Water Corporation (Sydney Water);	• provisions relating to works;
• the functions of Sydney Water;	• the preparation and implementation of MOUs;
• the area of operations;	• customer contracts;
• the granting of the Operating Licence;	• fees and charges;
• the objectives of Sydney Water;	• management of infrastructure;
• the functions of the Licence Regulator;	• offences provisions; and
• environmental management;	• other miscellaneous matters.
• the operational audit;	

3.3 OPERATING LICENCE

Sydney Water must conduct its activities in accordance with an Operating Licence issued under section 12 of the Sydney Water Act, 1994. For this audit period two operating licences apply:

- The original Operating Licence from 1 January 2000 up until 11 April 2000; and
- The amended Operating Licence from 12 April 2001 to 30 June 2001.

Egis has reviewed the original Operating Licence and notes that Section 5.6 of that Licence specifies the auditable parts of the licence. These may be summarised as follows:

- Customer Response Measures referred to in Clause 4.15;
- Operational Standards referred to in Clause 5.5;
- Sydney Water's achievements of objectives of its Environment Plan and Demand Management Strategy; and
- Sydney Water's obligations under Memoranda of Understanding with the Water Administration Ministerial Corporation, the Department of Health and the Environment Protection Authority.

These are generally consistent with the auditable requirements of the new Operating Licence (described in Section 10 of the Licence). The requirements of the current Operating Licence are described in Section 2 of each chapter of this report.

In discussion with IPART it was agreed that the audit should be conducted against the requirements of the revised Operating Licence with reference to the original Licence only on an exception basis.

3.4 CUSTOMER CONTRACT

The Customer Contract sets out the terms of the contract between Sydney Water and each person who is defined to be a customer of Sydney Water. It sets out the rights of customers and those of Sydney Water. The Contract is comprehensive and includes the areas outlined in **Table 3.2**.

Sydney Water and IPART have recently negotiated a revised Customer Contract. This revised contract was not released when this report was being prepared.

Table 3.2: Key Areas of the Customer Contract

• Water supply;	• Disconnection and reconnection;
• Sewerage and stormwater drainage services;	• Sydney Water's rights to interrupt supply;
• Consultation and information;	• Sydney Water's rights to refuse supply;
• Notice of interruption to supply and entry onto land;	• Sydney Water's rights in relation to charges, meters and accounts;
• Maintenance and repairs;	• Limitation of liability of Sydney Water; and
• Customer assistance, redress and compensation;	• Customer and Sydney Water responsibilities for water, sewerage and stormwater drainage services.
• Charges, meters and accounts;	

3.5 MEMORANDA OF UNDERSTANDING

Sydney Water is required, under Part 6, Division 3 of the Act and the provisions of the Operating Licence, to enter into Memoranda of Understanding (MOUs) with key regulatory agencies. The objective of the MOUs is to assist in the formation and development of "*cooperative relationships*" between the agencies with a view to furthering the objectives of the Operating Licence and the Act.

The key regulatory agencies with which Sydney Water has established MOUs are:

- Water Administration Ministerial Corporation (WAMC);
- NSW Department of Health (NSW Health); and
- NSW Environment Protection Authority (EPA).

MOUs are useful in identifying roles and responsibilities and for establishing the frameworks for on-going consultation and joint initiatives between the parties. They become more useful and rigorous documents, when they also contain specific agreements for planning, implementation, monitoring and review of programs.

3.5.1 Water Administration Ministerial Corporation and Sydney Water

The MOUs with the Water Administration Ministerial Corporation (WAMC) was signed in 1996 and was to continue until 30 December 1999. The MOU is thus out of date.

The MOU sets out the intended relationship between WAMC (managed by the Department of Land and Water Conservation) and Sydney Water. It relates to the use and management of both surface and groundwater pending the development of a water use licence (the equivalent of which has now been issued). The MOU sets out the principals for cooperative actions, rights and obligations of signatories, structures and processes and a schedule of agreed programs of study, all of which were to be completed prior to this audit period.

3.5.2 NSW Department of Health and Sydney Water

The MOU with NSW Health was entered into in November 1997 and recently updated (November 2000). Its objective is consistent with Sydney Water's Operating Licence being to set the terms for a "*cooperative relationship*" and includes issues of respective roles and responsibilities, dispute resolution, liaison and public health issues and events.

3.5.3 NSW Environmental Protection Authority and Sydney Water

The MOU with the EPA is to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements. It was executed in November 1996 and expired at the same time as the previous Operating Licence (April 2000), thus is out of date. The EPA MOU includes an agreed purpose, principles, structures and processes, data sharing and mechanisms for dispute resolution and amendment.

3.6 OTHER ACTS

Sydney Water is obliged to comply with the provisions of all other NSW Acts. The Acts that are most relevant to this audit include:

- Environmental Planning and Assessment Act, 1979;
- Protection of the Environment Operations Act, 1997;
- Public Health Act, 1991;
- Water Legislation Amendment (Drinking Water and Corporate Structure) Act, 1998;
- Water Act, 1912; and
- Independent Pricing and Regulatory Tribunal Act, 1992.

4. MEMORANDA OF UNDERSTANDING

4.1 SUMMARY OF FINDINGS

Sydney Water is required to maintain Memoranda of Understanding (MOU) with the Water Administration Ministerial Corporation (WAMC), NSW Department of Health (NSW Health) and Environment Protection Authority (EPA) for the term of the Licence. 'Partial compliance' was assessed as only one (viz:- the MOU with NSW Health) has been maintained. The MOU with NSW Health was amended during the audit period and Sydney Water exhibited a 'High compliance'.

In the case of EPA and WAMC, the MOUs are out of date having received little or no amendment since the original signing in 1996. These two MOUs reflect the responsibilities and accountabilities of EPA, WAMC and Sydney Water Corporation as at 1996 and not those that applied to the audit period. For example, these MOUs do not identify a basis of "*cooperative relationship*" as required by the Operating Licence nor reflect the context of the significant legislative and operational changes that have occurred over the last five years (viz:- water crisis, establishment of the Sydney Catchment Authority and establishment of the Protection of the Environment Operations Act). Whilst Sydney Water indicated that the relationship with, for example, WAMC appears positive and mature, this is not evident in the MOU document itself. The MOU with WAMC does not, for example, reflect Sydney Water's new role as joint manager (with Sydney Catchment Authority) of Sydney's water supply.

It is recognised Sydney Water has sought to update and amend, for example, the WAMC MOU, though the views of the regulatory agency has prevailed and the MOU remains outdated. MOUs should be updated to reflect the operational activities and requirements of Sydney Water, EPA and WAMC.

4.2 SUMMARY OF REQUIREMENTS

Section 35 of the Sydney Water Act 1994 requires Sydney Water to maintain Memoranda of Understanding with three agencies, namely the Water Administration Ministerial Corporation (WAMC), NSW Department of Health (NSW Health) and the Environment Protection Authority (EPA) for the term of this Operating Licence. A Memorandum of Understanding is entered with each of the three agencies recognising the regulatory role these agencies have with Sydney Water. Should Sydney Water and the respective regulatory agency not be able to agree on the terms of the MOU then the views of the regulatory agency prevail. The amendments to three Memoranda are to be made available for public input through public exhibition and public comment.

The Operating Licence, clause 3.3.2, states the purpose of the Memoranda is to establish "*cooperative relationships*" between the parties (clause 3.3.2) and, in particular, recognise the role of NSW Health in providing advice in relation to drinking water qualities and the supply of safe water. Further, the EPA MOU needs to recognise EPA's role as an environmental regulator of the State and also ensure Sydney Water is committed to environmental improvements.

Though not stated within the respective Operating Licence clause, the relationship between Sydney Water and the Water Administration Ministerial Corporation should reflect Sydney Water's role as a joint manager (with Sydney Catchment Authority) of Sydney's water supply. Sydney Water is licensed by the Department of Land and Water Conservation for the North Richmond Water Filtration Plant, Manly Dam and Botany Wetlands.

A final clause under Section 3.3 (Clause 3.3.3) also indicates that there is no limit to the persons with whom Sydney Water may have a Memorandum of Understanding.

4.3 DETAILS OF COMPLIANCE

Table 4.1: Memoranda of Understanding – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2.2	Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual Audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the DLWC and the relevant agency has undertaken an investigation of that matter. However, the Licence regulator may, as part of the Annual Audit:		
10.2.2 (a)	Report on Sydney Water's implementation of any MOU referred to in clause 3.3.1.	No Requirement	Sydney Water has MOUs with NSW Health, Environmental Protection Authority and the Water Administration Ministerial Corporation (via the Department of Land and Water Conservation). Although the Operating Licence does not limit (Clause 3.3.1) the persons with whom Sydney Water may have an MOU, no other MOUs have been established. Audit assessment of the MOUs is outlined in the following Table 4.2. NPWS has however, indicated (letter 22 October 2001) that it is in the process of developing a MOU with Sydney Water (refer to Appendix H).

Table 4.2: Memoranda of Understanding – Part 3 Licence Clauses

Clause	Requirement	Compliance	Findings
3.3	Memoranda of Understanding		
3.3.1	<p>In accordance with Section 35 of the Act, Sydney Water must maintain a Memorandum of Understanding (MOU) with each of the Water Administration Ministerial Corporation (WAMC), NSW Health (Health) and Environment Protection Authority (EPA) for the term of this Licence.</p> <p>[Note: Section 35 of the Act requires Sydney Water to enter into separate memoranda of understanding with certain regulatory agencies, being the Water Administration Ministerial Corporation, the Director-General of NSW Health and EPA. If Sydney Water and those regulatory agencies are not able to agree on a term of the memorandum of understanding, the view of the regulatory agency prevails. Section 36 deals with public exhibition of memoranda of understanding.]</p>	<p>Partial Compliance:</p> <p>MOU NSW Health <i>High Compliance</i></p> <p>MOU EPA <i>Low Compliance</i></p> <p>MOU WAMC <i>Low Compliance</i></p>	<p>MOUs exist between the Sydney Water Corporation and the WAMC, NSW Health and EPA. Operating under current and “cooperative” MOUs is a joint responsibility of Sydney Water and its regulators. Further, Section 35 of the Act requires that where Sydney Water is not able to agree on the terms of the Memorandum of Understanding then the views of the regulatory agency prevail. In this regard Sydney Water’s performance in “maintaining” the MOUs is somewhat dependent on the response from the respective regulatory agencies. Sydney Water has sought to update or maintain the currency of its MOUs over the audit period.</p> <p>Two of the MOUs (viz: the WAMC and EPA) are largely out of date and do not reflect a “cooperative relationship” between the parties. By comparison the Memorandum of Understanding with the Department of Health is a current document having being reviewed and re-issued in March 2001 and exhibits high compliance with the requirements of the Operating Licence.</p> <p>The MOU relating to WAMC and EPA are dated the 23 December 1996 and December 1996 respectively. The WAMC and EPA MOUs do not reflect the current operating environment. Both were established prior to the water crisis and prior to significant changes in the legislative and regulatory environment in which Sydney Water operates. The legislative changes include the enactment of the <i>Protection of the Environment Operations Act 1997</i>, the <i>Sydney Water Catchment Management Act 1998</i> (which established the Sydney Catchment Authority) and amendments to the <i>Sydney Water Act 1994</i> by the <i>Drinking Water Corporation Structures 1998</i>.</p> <p>The MOUs with WAMC and EPA are recommended for updating to reflect the operating, legislative and community’s expectations of the relationship between the Sydney Water Corporation and EPA and the WAMC.</p>
3.3.2	<p>The Purpose of a Memorandum of Understanding is to form the basis for co-operative relationships between the parties to the memorandum. In particular:</p> <p>(a) <i>The memorandum with NSW Health is to recognise the role of NSW Health in providing advice to the Government of NSW in relation to</i></p>	<p><i>Low Compliance</i></p>	<p>A positive and co-operative relationship has been established between Sydney Water and the NSW Health and is reflected in their MOU. However, the MOUs, and action under the MOUs, relating to the WAMC and EPA are not evidence of such a relationship.</p> <p>As indicated Section 35 of the Act enables the regulatory agency’s views to prevail where there are areas of disagreements with respect to the Memorandum of Understanding. In this regard Sydney Water has had to respond to the level of priority or interest from the agencies in maintaining and</p>

Table 4.2: Memoranda of Understanding – Part 3 Licence Clauses

Clause	Requirement	Compliance	Findings
	<p><i>drinking water quality standards and the supply of water which is safe to drink; and</i></p> <p><i>(b) the memorandum with the EPA is to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements;</i></p>		<p>operating a current MOU.</p> <p>Section 36 requires public exhibition of Memorandum of Understanding. The amendments to the Sydney Water / NSW Health MOU were advertised 25 August 2000 and available to the public to review and comment prior to both organisations signing off the amendments on the 21 November 2000.</p>
		<p>MOU NSW Health <i>High Compliance</i></p> <p>MOU EPA <i>Partial Compliance</i></p> <p>MOU WAMC <i>Low Compliance</i></p>	<p>Evidence presented by Sydney Water demonstrated cooperative relationship exhibits with NSW Health and a focus that recognises NSW Health's role in drinking water quality standards and the supply of safe drinking water (see Appendix E for MOU compliance rating).</p> <p>Evidence was presented that the MOU recognises EPA's role as an environmental regulator. Activities through a Strategic Liaison Group (SLG) and Joint Operational Group (JOG) indicate an improving relationship following the strain placed on relations as a consequence of Sydney Water's formal appeal challenging the EPA licence for sewer overflows (see EPA compliance table Appendix E).</p> <p>The MOU is outdated and does not reflect a "cooperative relationship" as prescribed in the Operating Licence. Whilst the relationship would appear positive, DLWC has had a focus on its own legislation or new legislative responsibilities (viz. Water Management Act 2000) which have minimised DLWC's interest in amending the MOU. Notwithstanding the MOU being outdated, evidence of cooperative activities were apparent. These activities relate to the current mutual interests of the agencies rather than the MOU being a guide, or catalyst, for cooperation. Establishment of a new MOU reflecting the current legislative and operational framework of Sydney Water and DLWC is recommended to provide an improved base for a cooperative relationship and audit compliance.</p>
3.3.3	Clause 3.3.1 does not limit the persons with whom Sydney Water may have a Memorandum of Understanding	No requirement	<p>Sydney Water has not exercised this clause in that it does not have MOUs apart from those three specified viz: EPA, WAMC and NSW Health.</p> <p>NPWS has, however, expressed an interest in establishing an MOU with Sydney Water.</p>

4.4 DISCUSSION

Each of the three authorities having MOUs with Sydney Water was asked to comment on the MOUs and the responses are outlined below (see **Appendix H**).

4.4.1 MOU with the NSW Department of Health

NSW Health advised by letter/fax 26 October 2001 that it is satisfied that Sydney Water has complied with the public health requirements of the MOU and it enjoys *"an open, honest and cooperative relationship with Sydney Water"*.

4.4.2 MOU with the NSW Environmental Protection Authority

EPA has advised that the MOU has (technically) lapsed and is presently working with Sydney Water to prepare a new MOU.

4.4.3 MOU with the Water Administration Ministerial Corporation

The Department of Land and Water Conservation, letter 19 October 2001, confirmed Sydney Water had approached DLWC to revise the MOU between the two parties. DLWC further indicated it was considering the items to be included in a revised MOU and, in particular, mentioned the implementation of the Water Management Act 2000 and creation of the Sydney Catchment Authority.

4.5 FACTORS AFFECTING COMPLIANCE

The main issues impacting upon the maintenance of an MOU between Sydney Water and EPA, NSW Health and WAMC is the relationship between these organisations and the priority and resources that the regulators allocated to implement the MOUs.

As indicated in clause 3.3.2 the purpose of the MOU is to form a basis for “*cooperative relationship*”. That relationship must be two-ways and where such a relationship has been established (viz: Sydney Water and NSW Health) a viable MOU has been established, amended and maintained. The Sydney Water-NSW Health MOU is leading to a positive *co-operative relationship*.

A court challenge by Sydney Water against the EPA's sewer overflow licence impacted on a co-operative relationship. There is always likely to be some difficulty in the relationship between a regulator and a regulatee and this relationship will require continued attention. The Government has identified the MOU as an important tool to facilitate this relationship. In this regard, and following the licence appeal, both organisations have agreed upon a strategy to regain such a relationship and the key issues that require resolution. This agreement was evidenced through the minutes of the Strategic Liaison and Joint Operational Groups.

In the case of the WAMC, available information indicates Department of Land and Water Conservation had higher priorities (particularly in regard to its enhanced role in water resource management) which were dominant. It's resources and efforts were directed to this new legislation (viz; Water Management Act 2000), relegating the MOU to a lower priority. As indicated above, its MOU with Sydney Water has expired. As required by the Operating Licence, the views of the regulatory agency prevail, thus Sydney Water's pursuit of a renewal of the MOU with WAMC was not successful.

4.6 RECOMMENDATIONS

4.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R3.1 Amend the existing Memoranda of Understanding with the EPA and the WAMC, through agreement at CEO level, by the 30 June 2002 to reflect the legislative and operational changes since 1996 and to form the basis of "*co-operative relationships*".

4.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R3.2 Continue to develop a Memoranda of Understanding with National Parks and Wildlife Service to include such issues as: licence arrangements for SWC easements and activities within NPWS parks and reserves; nature and cultural heritage issues; and, restoration and rehabilitation of developed areas resulting from water and sewerage construction, operation and maintenance works.

5. CUSTOMER AND CONSUMER RIGHTS

5.1 SUMMARY OF FINDINGS

Overall, Sydney Water obtained 'High compliance' with the terms of the Customer Contract although the contract is presently under review by the Licence Regulator.

In determining compliance, the level of satisfaction described by customers was used as an indicator of performance, where relevant, together with an assessment of the level of complaints received under key sections of the contract. Detailed compliance findings can be found in **Appendix G**.

The Customer Contract needs to be amended to conform to the requirements of the new Operating Licence. The use of a broad suite of customer service and satisfaction measures, including those agreed to by the Minister, should serve as a base for the evaluation of compliance with the future Customer Contract. Measures of customer satisfaction need to be collected through the Sydney Water annual customer survey program. The knowledge and awareness of customers about their rights under the Customer Contract should be assessed through the annual customer survey program.

Customer Councils should each provide an annual assessment of Sydney Water's compliance with the Customer Contract.

Sydney Water obtained 'Full compliance' with the requirement to develop the Code of Practice and Procedure on Debt and Disconnection. The code included deferred payment and payment by instalment. Sydney Water received 'Partial compliance' for including payment option advice in consumption bills as not all bills contained the required information.

Sydney Water also obtained 'Full compliance' with the directives of the Minister relating to customer service.

5.2 SUMMARY OF REQUIREMENTS

Part 5 of the Licence specifies requirements relating to Customer and Consumer rights. The key requirements of these clauses are:

Clause 5.1 - Customer contract: This clause refers to the customer contract (see **Appendix F**). The clause specifies what needs to be covered in the contract, the process for review of the contract and the process necessary to communicate the contract to customers.

Clause 5.2 – Consumers: The need to deal with all complaints under the customer contract as if the complainants are consumers.

Clause 5.3 - Code of practice and procedure on debt and disconnection: The need for Sydney Water to establish a code which includes a number of specific features; is included in the customer contract; and information about the code be disseminated in specific ways.

Clause 5.4 - Customer Councils: That Customer Councils be established, consulted and operate under a specific set of protocols as defined in the Licence.

Section 10 of the Licence requires that the audit must investigate and prepare a report on:

10.2.1 (a) on-going compliance by Sydney Water with its Customer Contract and specific areas of non-compliance (this relates to Clause 5.1).

10.2.1 (b) Sydney Water's compliance with its code of practice and procedure on debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water.

5.3 DETAILS OF COMPLIANCE

Table 5.1: Customer and Consumer Rights – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	NA	No requirement.
10.2.1(a)	Ongoing compliance with Customer Contract and specific areas of non-compliance	High compliance	Detailed findings are presented for major clauses of the Customer Contract in Appendix F .
10.2.1 (b)	Sydney Water's compliance with it's code of practice and procedure of debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water	High compliance	Sydney Water has developed a code of practice and procedure on debt and disconnection as required. However, Sydney Water has not advised customers, through consumption bills, about the payment options for the full audit period.

Table 5.2: Customer and Consumer Rights – Part 5 Licence Clauses

Clause	Requirement	Compliance	Findings
5.3	Code of Practice & Procedure on Debt & Disconnection	NA	No requirement.
5.3.1	The code of practice and procedure on debt and disconnection must be developed within 6 months of the commencement date (by 12 October 2000)	Full compliance	The Code was approved by an Executive Management team of the Customer Service Division on 12 October 2000. Policy No D RAD 0001 U.008 has been sighted. It is noted that this policy has since been slightly amended and subsequently approved on 10 July 2001.
5.3.2(a)	Provide for deferred payment or payment by instalment options for consumption bills	Full compliance	The code provides for deferment of payment or payment by instalment.

Table 5.2: Customer and Consumer Rights – Part 5 Licence Clauses

Clause	Requirement	Compliance	Findings
5.3.2(b)	Provide for the payment options referred to in (a) to be advised in consumption bills	Partial compliance	A brochure has been prepared and circulated with the April 2001 bill describing the payment options. Whilst the schedule of bill-inserts indicates that the Code is to be enclosed with the bill once a year (complying with 5.3.4 (b)), a review of a sample bill initially provided by Sydney Water suggests that these options were not specifically stated in the bill, itself. Sydney Water provided a second sample of bills issued in May 2001 that had the clause inserted. It therefore appears that the bills complied with this clause for part of the year.
5.3.3	Sydney Water must include the code of practice and procedure on debt and disconnection in its Customer Contract.	Non compliance	This performance is regarded as a technical non-compliance due to the timing of the new customer contract. As the present Customer Contract was prepared prior to the current Operating Licence, this code is not specifically mentioned. The revised Customer Contract will therefore need to comply. Sydney Water has made the point that the Code has not been included due to the timetable set for the review of the Customer Contract. This review is still to be complete. While Sydney Water continues to operate with a Customer Contract developed prior to the new licence, the result is Sydney Water is not complying with its present licence.
5.3.4	Sydney Water must disseminate free of charge information on its code of practice and procedure on debt and disconnection: (a) by placing sufficient copies with the Rental Bond Board for collection by interested persons; (b) to Customers at least once annually with their quarterly or other bills; and (c) to any other person on request.	Non compliance Full compliance Full compliance	 Sydney Water indicated that copies would be with the Rental Bond Board by August 2001, which is outside the audit period. As indicated in clause 5.3.1 Sydney Water met the requirements of the development of the code, however the amended policy was not approved until the 10 July 2001 due to further consultation with the Public Interest Advocacy Centre (PIAC) and therefore had not been printed and lodged with the Rental Bond Board. Sydney Water provided the billing insert schedule in which the code was to be circulated. Sydney Water confirmed people were able to obtain copies upon request.

Table 5.3: Customer and Consumer Rights - Ministerial Directives

ID	Requirement	Compliance	Findings
M11	"...I require the Corporation to develop a suite of performance measures relating to customer service and satisfaction..."	Full compliance	The Minister has indicated in a letter to the Chairman of Sydney Water, on 22 October 2001, that he expects data collection on customer service and satisfaction measures to begin and therefore implies acceptance of the identified measures.
M12	(a)"...I further require Sydney Water to enter into discussions with IPART to negotiate the adoption of the measures for audit purposes. I require negotiations with IPART to commence by the end of March 2001..."	Full compliance	The Minister sent a letter to the Chairman of Sydney Water on 22 August 2001 indicating that he was satisfied negotiation between Sydney Water and IPART had begun by the required time. The Minister has requested that the collection of data on the relevant indicators be undertaken from 1 July 2001.
	(b)"...with the measures placed on the Sydney Water website within one month of their finalisation and performance reported on that site at least six monthly."	No requirement	The measures had not been placed on the Sydney Water website within the audit period, however, given the Minister's acceptance it would be reasonable to expect that these measures would be published within one month of the Minister's letter dated 22 August 2001.

5.4 DISCUSSION

5.4.1 Customer Contract

5.4.1.1 Previous Reviews

The 1999 Sydney Water Audit assigned Sydney Water a “High compliance” against the clauses relevant to the Customer Contract. No specific review of the separate components of the Customer Contract appears to have been undertaken. However, the previous auditor indicated that for full compliance, at the next audit, the Customer Contract needed to be updated and aligned to the 2000/04 Operating Licence. This recommendation is still relevant. An assessment of the major clauses of the Customer Contract has been undertaken and an assessment of compliance assigned.

5.4.1.2 Assessing Customer Satisfaction with Components of the Contract

The Customer Contract is under review and presently being discussed between Sydney Water and the Licence Regulator. This will be a critical document given the changes made in the new Operating Licence. As a result, there are requirements of the Licence that are not adequately reflected in the present Customer Contract. However, this Contract does specify the rights of the customer with regard to a number of services provided by Sydney Water. For example, the Contract indicates that if Sydney Water does not meet specific requirements then the customer may be entitled to a rebate.

While assessment of some of these services can be undertaken, through testing procedures, such processes do not take into account customer perception. An assessment using customer surveys and complaint data can better relate performance of the asset base with customer satisfaction.

Sydney Water has undertaken a number of customer surveys that provide insight into the needs and perceptions of the customers. This information is key to evaluating how successful Sydney Water is in achieving satisfied customers. As such, it is important that the methods and mechanisms used to evaluate customer satisfaction and perceptions are reliable and rigorous. The two key surveys to assess overall customer satisfaction with Sydney Water are:

- Residential Customer Survey (nine annual surveys have been undertaken); and
- Commercial/Industrial Customer Survey (seven such surveys have been undertaken).

These surveys canvas a wide range of views on the service provided by Sydney Water and are important in identifying areas of concern to customers. Because of the importance of this information for future business planning, the Auditor has reviewed these surveys with specific reference to the methods used to collect data.

Standard mechanisms are used to obtain a random sample of people from the community, however the response rate obtained by the contractor for Sydney Water appears relatively low at 36%.

Sydney Water has an opportunity to improve the rigour of the data collection system by encouraging their contractors to improve their response rates. To improve the reliability of the data, it is suggested that Sydney Water aim to obtain a response rate over 60%. The auditor is aware of various surveys conducted in the Sydney area, similar in structure to the Sydney Water, with response rates significantly higher than 60%. The key issue with obtaining high response rates is that it reduces the potential for response bias. While Sydney Water believes that there is no response bias, there is no analysis to support this.

The commercial and industrial survey had higher response rates that ranged from 46% to 95%. Again, it appears worthwhile for Sydney Water to improve the lower response rates to limit response bias.

Sydney Water undertakes a number of other surveys focussed upon specific issues that it perceives as requiring further attention. Such surveys include:

- Community views on stormwater management;
- Water use practices and intentions; and
- Customer contact satisfaction survey.

A number of further surveys have been undertaken, outside the audit period, and provide valuable insight into the perceptions of the customers toward Sydney Water.

The comprehensive use of information from community and customer surveys as undertaken by Sydney Water should be commended.

It is recommended that for future surveys, the development of the survey instrument be based on the key features of the new Customer Contract to ensure customer response can be evaluated as part of Sydney Water's compliance performance.

Customer Councils, as key groups of customer stakeholders, could also provide information to assess Sydney Water's compliance with the Customer Contract. While Sydney Water has indicated that it believes only the Corporate Customer Council and the Industrial/Commercial Trade Waste Customer Council are truly representative of its customers, Councils should be able to represent the views of a diverse range of customers and therefore have a role in assessing compliance with the Customer Contract. If such Councils are not able to represent customer views then Council membership should be reviewed.

5.4.2 Code of Practice and Procedure on Debt and Disconnection

The Code of Practice and Procedure on Debt and Disconnection is documented as Customer Service Policy No: D RAD 0001 U.0008. This policy was adopted within the 6 month time frame as required by the Licence and subsequently updated through some minor amendments.

Clause 5.3.2 (b) of the Licence requires that payment options be included on the consumption bill. Sydney Water provided two sample bills: one had the payment options included as required (May 2001) while an earlier bill did not. It would therefore appear Sydney Water did not comply with this clause for the full audit year.

Further, Clause 5.3.3 of the Licence requires that the Code of Practice and Procedure on Debt and Disconnection be included in the Customer Contract. While there are sections of the Customer Contract that refer to assistance with paying accounts (clause 7.4 of the Customer Contract) and disconnection (clause 8.1 of the Customer Contract) there is no specific reference to the present Code. This is regarded as a technical non-compliance due to the timing of the new customer contract.

Clause 5.3.4 also has specific requirements regarding the dissemination of the Code of Practice. Sydney Water has indicated that a copy of the Code was included with bill mailing at the end of May 2000. However, folio (B7), provided to the Auditor, suggests that copies of the Code were not included (with the Rental Bond Board before the end of August 2001) within the audit period.

The Licence Clause (10.2.1 (b)) requires assessment of Sydney Water compliance with this Code and "*any similar initiatives developed by Sydney Water*". Such an initiative is the Payment Assistance Scheme (PAS) under which vouchers valued at \$25 are issued by a range of welfare agencies. These agencies can issue vouchers at their discretion based on their assessment of the needs of the customers. Sydney Water monitor the number of vouchers issued and the number of properties against which the vouchers are applied. Vouchers to the value of \$506,690 were issued (against 5,037 properties) during 2000/01. This value is well below the ceiling of \$2 million per annum nominated by IPART.

5.4.3 Ministerial Requirements

5.4.3.1 Performance measures relating to Customer Service and Satisfaction

The Minister wrote to the Chair of Sydney Water on 22 August 2000 regarding the development of a suite of performance measures for customer service and satisfaction. The Minister attached a series of indicators (Attachment 3 to his letter) upon which he expects Sydney Water to collect data from 1 July 2001.

These indicators included:

- Time to provide a substantive response to customer complaints;
- Percentage of calls received by a permanent primary advertised number that are answered within required time periods;
- Percentage of metered accounts receiving a bill not based on: (1) an actual meter read during the report year; (2) a business meter read for two consecutive report years;
- Time to provide a substantive response to account contacts by specified time bands;
- Calls made to one of the permanent advertised contact numbers where callers received a busy tone;
- Total number of calls abandoned;
- Total number of disconnections for non payment;
- Total number of flow restrictions for non payment;
- Total number of debt recovery actions; and
- Number and value of payment assistance vouchers utilised.

The Minister indicated that he expects IPART to review and possibly refine the scope of the indicators after the first year of data collection. Reporting on these indicators may need to be a key part of the 2001/02 audit of Sydney Water or it could be undertaken independently by IPART.

Consideration will need to be given by IPART to the relationship between the measures of customer service and the requirements of the Customer Contract and whether these measures adequately capture the level of satisfaction experienced by customers of Sydney Water.

5.4.3.2 (a) Discussions with IPART on the adoption of these measures for audit purposes

The Minister's letter to the Chairman of Sydney Water on 22 August 2001 states:

"I consider Sydney Water's involvement in this review and through discussions with the Tribunal's consultant ... to satisfy my requirements to begin the negotiations with the Tribunal by the end of March this year".

5.4.3.2 (b) "...with the measures placed on the Sydney Water website within one month of their finalisation and performance reported on that site at least six monthly."

The Chairman did not receive the letter from the Minister until after the end of the audit period therefore it is not considered a requirement for this report.

5.5 FACTORS AFFECTING COMPLIANCE

5.5.1 Customer Contract

The key issue relevant to the level of compliance against the Customer Contract is similar to that found by the previous audit. The Customer Contract needs to be updated and reflect the requirements of the new Operating Licence. Given that this work is presently under way, the new Customer Contract should be available for the next audit.

As the key outcome of the Customer Contract is to identify customer rights and ensure customer service and satisfaction, it will be important to identify measures that can be used to assess performance of Sydney Water against the clauses of the Contract.

However, because the customer satisfaction information presently collected is only indirectly aligned to the content of the Customer Contract, it is difficult to assess the level of compliance with a high degree of confidence.

5.5.2 Code of Practice and Procedure on Debt and Disconnection

The key issue affecting compliance has been the delay in preparing the code. While the original code was adopted by the required date (12 October 2000) a revised code was not approved for a further seven months.

A further relevant issue is that the present Customer Contract was developed prior to the current Licence, and the review timetable has not allowed the Contract to be updated in time for this audit period.

5.5.3 Ministerial Requirements

The requirement for the customer service and satisfaction measures to be placed on the Sydney Water website occurs outside the period of the audit. As a result it was deemed not to be a requirement for this audit.

5.6 RECOMMENDATIONS

5.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R5.1 Ensure that the Customer Contract is revised in accord with the Sydney Water 2000-2004 Operating Licence.
- R5.2 Ensure that specific customer service and satisfaction measures are identified for the key clauses of the Customer Contract. Performance measures should be used to assess compliance with the Customer Contract including:
- the performance measures approved by the Minister;
 - the measures utilised in the annual customer survey undertaken by Sydney Water; and
 - the assessments undertaken by Customer Councils.
- R5.3 Improve the monitoring of performance against the Customer Contract through:
- development of a formal customer survey research program based around the requirements of the Customer Contract;
 - use of the Customer Councils as a mechanism to evaluate Sydney Water's compliance with the Customer Contract. Each Customer Council should prepare a formal report as part of their annual program of work that assesses Sydney Water's performance against the Customer Contract and this report should be provided to the Licence Regulator as part of the Annual Audit. This review should be chaired by a non-Sydney Water member;
 - investigation, in association with IPART and other License Regulators throughout Australia, the potential to develop a uniform suite of customer satisfaction measures which can be utilised as benchmarks for the evaluation of the performance of water utilities. This would allow not only the assessment of individual utilities through time but also permit comparison of performance. These performance measures should be included in the ongoing customer survey program undertaken by Sydney Water and reported annually as part of the audit process; and
 - alignment of the customer research program with infrastructure catchments to allow the results to be used as a diagnostic and performance review tool for systems.

5.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R5.4 Assess, as part of the annual surveys, the level of awareness and knowledge of customers about their rights under the Customer Contract.
- R5.5 Confirm, as part of the annual surveys, that those customers who had service problems (water discontinuity, water pressure, sewer overflow and dirty water) and were entitled to receive a rebate did receive a rebate.

- R5.6 Ensure that a review is undertaken of the customer performance and satisfaction measures agreed to by the Minister as a result of the previous audit.
- R5.7 Include advice about the Code of Practice and Procedure on Debt and Disconnection on all consumption bills as required by the Operating Licence.
- R5.8 Include the Code of Practice and Procedure on Debt and Disconnection in the revised Customer Contract as required by the Operating Licence.
- R5.9 Maintain copies of the Code of Practice and Procedure on Debt and Disconnection at the Rental Bond Board as required by the Operating Licence.

6. WATER QUALITY

6.1 SUMMARY OF FINDINGS

Sydney Water obtained 'Full compliance' with respect to the supplies of treated drinking water to their customers. The water quality supplied is generally of an excellent standard, and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health.

Sydney Water obtained 'Full compliance' with respect to having regard to the concepts of risk minimisation in its management of the water supplies.

Sydney Water has commissioned an independent study of the costs and benefits of complying with aesthetic guideline values. This study involves community consultation and the report is expected to be completed prior to 31 January 2002.

Sydney Water has prepared an *Annual Drinking Water Quality Monitoring Plan* for the water supply systems generally in accordance with the Licence, to monitor health-related and aesthetic-related water quality parameters to demonstrate compliance with the Guidelines. Improvements in the Plan are suggested, primarily relating to an improved definition of the processes used for quality control.

Sydney Water obtained 'Full compliance' in respect to monitoring in accordance with the Annual Drinking Water Quality Monitoring Plan. An annual Drinking Water Quality Report which includes results of monitoring health-related and aesthetic-related water quality characteristics has been prepared and is made available to persons free of charge, including via the Sydney Water website. However, a 'High compliance' was placed on the reporting aspect as results were reported on a system-wide aggregate basis; this can make it difficult to distinguish whether particular water quality zones experience water quality problems. It is recommended that this system of reporting be reviewed. The report included a very brief summary of water quality incidents occurring over the year and it is recommended that this be expanded.

Sydney Water obtained 'Full compliance' in respect to the preparation of a Five-year Drinking Water Quality Management Plan in accordance with the Licence. This is an excellent, comprehensive document. The preparation of this Plan has included public consultation and strategies for the comprehensive management of drinking water quality and to minimise risk to public health and to meet aesthetic guidelines. An audit program for potable water backflow prevention devices has been prepared as a separate document.

Sydney Water obtained 'Full compliance' in respect to the preparation of a Drinking Water Quality Incident Management Plan, in accordance with the Licence.

Sydney Water obtained 'High compliance' in respect to the supply of other grades of water.

6.2 SUMMARY OF REQUIREMENTS

The objectives of Part 6 of the Operating Licence are to ensure that Sydney Water:

1. Supplies drinking water that is safe and meets appropriate guidelines;
2. Supplies grades of water in a manner that is safe to the end users and meets appropriate guidelines;
3. Is abreast of emerging water quality issues and engages the community in the development of future water quality goals; and
4. Has in place appropriate strategies and management plans that minimise risks and ensure continual improvements in its operation.

To meet the requirements of Part 6, Sydney Water is required to undertake the following.

- Supply treated drinking water to customers that complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health.
- Have regard to the concepts of risk minimisation in its management of the water supplies.
- Commission an independent study on the costs and benefits of complying with aesthetic guideline values; this is to involve community consultation and the report is to be completed prior to January 31 2002.
- Prepare a comprehensive Annual Drinking Water Quality Monitoring Plan to monitor health-related and aesthetic related water quality parameters to demonstrate compliance with the Guidelines. The sampling frequency and locations chosen for monitoring should be such that the results are representative of the water quality supplied to customers.
- Undertake monitoring in accordance with the Plan.
- Prepare an Annual Drinking Water Quality Report that reports on the health-related and aesthetic-related monitoring results, and make the Report available free of charge, including via the Sydney Water website.
- Prepare a Five-year Drinking Water Quality Management Plan. The preparation of this Plan is to include public consultation and strategies for the comprehensive management of drinking water quality, minimise risk to public health and to meet aesthetic guidelines. The Plan is also to include an audit program for potable water backflow prevention devices.
- Prepare an Annual Drinking Water Quality Improvement Plan incorporating system and operational changes needed to address problems identified through monitoring and inspection, reduce risk to public health and to meet aesthetic guidelines.
- Prepare a Drinking Water Quality Incident Management Plan which coordinates management of drinking water incidents.
- Meet environmental water quality requirements for discharges or water releases that take place under licences issued by regulatory agencies.
- Supply other grades of water, such as water for reuse, in accordance with relevant guidelines and requirements of government agencies.
- Comply with the following Ministerial Requirements.
 - Provide a status report on the implementation of actions to improve drinking water quality at North Richmond.
 - Provide regular updates on the process of independent validation of water quality.
 - Require AWT's laboratory to continue to satisfy the NATA requirements to retain accreditation.
 - Obtain and forward information from NATA in relation to AWT's methodology and processes.

6.3 DETAILS OF COMPLIANCE

Table 6.1: Water Quality – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	NA	No requirement.
(c)	Compliance by Sydney Water with its obligations under Part 6 of this Licence.	Full to High compliance	Refer to Table 6.2.

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
6.2	Drinking Water Quality – Standards		
6.2.1	Sydney Water must comply with the following relating to Drinking water:	NA	No requirement.
6.2.1(a)	The NHRMC and ARMCANZ Australian Drinking Water Guidelines 1996 (“1996 Guidelines”) relating to health guideline values	Full compliance	<p>Monitoring results indicated that the water supplied by Sydney Water to its customers is of a high quality and complies with the health guideline values outlined in the Annual Drinking Water Quality Monitoring Plan 2000/2001, as approved by NSW Health.</p> <p>The audit checks included a comparison of selected water quality data reported by the laboratory against the corresponding Quarterly Water Quality Report produced by Sydney Water; the data was found to be consistent with the reported results. (Note: In the system reports, there is a typographical error suggesting that the compliance requirement for faecal coliforms is 95% (it should be 98%). The results are in compliance with the 98% requirement).</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>Compliance with this clause has also been independently audited by PPK (Independent Audit of Drinking Water Quality for 2000/2001) on behalf of NSW Health and their finding was full compliance.</p> <p>The requirements of the Annual Drinking Water Quality Monitoring Plan are in general accordance with the 1996 Guidelines. The auditor notes:</p> <p>A number of the characteristics listed in the 1996 Guidelines are not monitored. These have been listed in the Plan which indicates that in the Plan that monitoring is not carried out for these characteristics with the approval of NSW Health. The auditor understands that the health-based characteristics which are not monitored are not expected to be of concern, and it is recommended that the Plan provide reference to a supporting document that justifies and provides evidence which supports the selection of health-based characteristics. In particular, the supporting document should address substances, such as disinfection byproducts and compounds, associated with activities that take place in the catchments as have been identified in the SCA catchment audit and Risk Management Plan.</p> <p>The sampling and reporting basis adopted by Sydney Water is on a supply system basis, rather than on a water quality zone basis, as indicated in the 1996 Guidelines (ie Section 6.2.4 "Monitoring Zones" of the 1996 Guidelines indicates that, for monitoring purposes, monitoring zones should normally have a population of 100 000). For example, in the case of the Potts Hill Supply System, the population is in the order of 1.3 million and the monitoring results are reported in aggregate for the whole of the supply system. If a larger population basis is used, as for Potts Hill, the chance is increased that there could be a portion of the zone which has a group of customers that receive water that is not in compliance with the requirements, and is not identified in the reporting because it is averaged with many other results. The extrapolation of the sampling basis outlined in the 1996 Guidelines to much larger populations (greater than 100,000) also results in a lesser number of samples being taken.</p> <p>The auditor notes that the current reporting of the health-based water quality characteristics indicates that they are consistent with good water quality and a change in reporting basis to that indicated in the 1996 Guidelines would not be expected to result in non-compliance.</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			It is recommended that Sydney Water review and confirm the sampling and reporting basis with NSW Health to ensure that it provides adequate confirmation of compliance on a local area basis and is in accordance with the 1996 Guidelines.
6.2.1(b)	Any amendments, updates or supplements to the 1996 Guidelines ("Updated Guidelines") relating to health guideline values specified by NSW Health	No requirement	Some amendments to the 1996 Guidelines have occurred for the audit period, however, these amendments mainly related to updating fact sheets. No amendments that resulted in changes to guideline values for health parameters were recorded.
6.2.1(c)	The aesthetic guideline values of the 1996 Guidelines specified by the NSW Minister for Health following consultation with the Minister	Full compliance	<p>The monitoring results indicated that the water supplied by Sydney Water to its customers complies with the aesthetic guideline values listed in the Annual Drinking Water Quality Monitoring Plan 2000/2001 as approved by NSW Health. Similar comments apply as for 6.2.1 (a).</p> <p>In the case of monochloramine and copper, both human health and aesthetic guideline values are listed in the 1996 Guidelines, but compliance is only required for the health guideline values and reporting compares the results against the human health guidelines. Monitoring for compliance with the aesthetic guidelines is considered under clause 6.2.3.</p> <p>Customer complaint data was reviewed, and it was found that there was considerable variation in the rates of customer complaints by local government area, and with month. For example, in some areas the numbers of dirty water complaints for one month was observed to be 3 – 4 times higher than the average rate (eg Penrith – January; and Randwick – February). Background rates were typically in the order of 1–3 per thousand customers per year over January – June 2001. This suggests that there can be local aesthetic water quality problems that are not identified in the compliance monitoring and reporting.</p>
6.2.1(d)	The aesthetic guideline values of the Updated Guidelines specified by the NSW Minister for Health following consultation with the Minister	No requirement	<p>Some amendments to the 1996 Guidelines have occurred for the audit period, however, these amendments mainly related to updating fact sheets.</p> <p>No amendments that resulted in changes to aesthetic guideline values were recorded.</p>
6.2.2	In delivering the Services, Sydney Water must have regard to the concepts of risk minimisation practices and system management of public water supplies in the	Full compliance	Sydney Water has adopted the concepts of risk minimisation and system management of public waste supplies outlined in the 1996 Guidelines, and is also taking a leadership role in the industry for adopting risk management principles (which are being considered by the NHMRC for possible

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
	1996 Guidelines (including in relation to <i>Cryptosporidium</i> and <i>Giardia</i>)		<p>inclusion in a revision to the 1996 Guidelines). In particular, Sydney Water has:</p> <ul style="list-style-type: none"> • Prepared a 5-year Drinking Water Quality Management Plan, which demonstrates a comprehensive risk-based approach to drinking water quality management. • Prepared a comprehensive risk study of the entire water supply system from “Catchment to tap”. Each risk identified is subjected to control actions. Annual review of the control actions is provided for. The Risk Management Plan for the Nepean Water Supply System was provided to the Auditor, as an example. • Coordinated with the Sydney Catchment Authority (SCA), Build Own Operate (BOO) and Sydney Water water treatment plant operators and operations staff to provide a multi-barrier approach to water quality control. Correspondence between SCA and Sydney Water regarding operational issues was provided for review. • Developed Standard Operating Procedures, such as procedures for mains flushing. • Prepared annual drinking water quality monitoring plans and consumer satisfaction reports to verify water quality. • Prepared incident management plans. • Carried out employee training on water quality issues, with records of training maintained on a register. • Carried out community consultation, including communication of information relating to water quality (for example, daily posting of test results on website) and consumer confidence report. <p>The compliance with this clause has also been independently audited by PPK (Independent Audit of Drinking Water Quality for 2000/2001). They concluded that there was full compliance.</p>
6.2.3	Sydney Water must commission an independent study of the costs and benefits of Sydney Water complying with the aesthetic guideline values of the NHRMC and ARMCANZ Australian Drinking Water Guidelines 1996 and must report to the Licence Review Body on the results of that study by no later than 31 January 2002,	No requirement	An independent consultant was engaged by Sydney Water, in May 2001, to report on the costs and benefits of Sydney Water complying with the aesthetic guideline values of the NHRMC and ARMCANZ Australian Drinking Water Guidelines 1996. Public consultation was underway during the audit period and had been advertised in the Daily Telegraph. Consultation period was to finish on the 23 October 2001.

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
	<p>to enable the Licence Review Body to report on the matter as part of the Mid term review.</p> <p>Sydney Water must ensure that the process of conducting the independent study includes public consultation in accordance with clause 1.2.2 on a discussion paper before the study is finalised</p>		The reporting requirement of this clause is outside the current audit period.
6.3	Drinking Water Quality – Monitoring		
6.3.1	Sydney Water must prepare, to the satisfaction of NSW Health, a comprehensive Annual Drinking Water Quality Monitoring Plan for the Water supply system by 30 June 2000 and then by 31 March in each subsequent year, for the duration of this Licence.	Full compliance	An Annual Drinking Water Quality Monitoring Plan 2000/2001 was prepared and approved by NSW Health on the 28 February 2000.
6.3.2	The Annual Drinking Water Quality Monitoring Plan for the Water supply system must include system performance monitoring and regular sampling, laboratory testing and processes to ensure quality control. The monitoring of Drinking water quality must include:	Full compliance	<p>The Annual Drinking Water Quality Monitoring Plan includes system performance monitoring and regular sampling at a large number of sites (more than 500). The Plan states that the monitoring is carried out by AWT ES&T, or subcontracted laboratory.</p> <p>A detailed review of compliance with this clause including quality control procedures had been carried out by PPK (Independent Audit of Drinking Water Quality for 2000/2001) on behalf of NSW Health and their finding was that there was full compliance.</p> <p>The Plan includes details on AWT's NATA accreditation which provides evidence that the analyses undertaken follows accepted laboratory procedures for analysis, and a copy of AWT's certification for ISO9001: 1994, which provides evidence that AWT has a quality management system in place. AWT is NATA certified for all of the analyses undertaken with exception of some pesticides, although AWT is certified for testing groups of pesticides. With regard to <i>Cryptosporidium</i> and <i>Giardia</i>, AWT was accredited by NATA in mid 2000 and must undertake 6 proficiency tests per year to maintain this accreditation. Information provided by Sydney Water and NATA indicated that the required tests had been completed and that the accreditation has been maintained.</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>The Plan does not state that the subcontracted laboratories should be NATA accredited, although the auditor understands that this is the case.</p> <p>The Plan does not indicate the quality control procedures that are to be adopted for sampling, although it was noted that AWT has a quality management system in place.</p> <p>The Plan does not include provision for independent analysis of samples by a secondary laboratory to confirm the results of the primary laboratory. This practice is not common in the water industry, but is common in the environmental field where compliance with guideline values is required to be shown. This has been considered in detail in the case of <i>Cryptosporidium</i> and <i>Giardia</i> monitoring (refer to discussion under review of Ministerial requirements), but could also be extended to parameters which are judged to be important.</p> <p>It is recommended that the Plan provide more detail (or reference supporting documents) on the quality control procedures that are adopted for both sampling and analysis. This should include the requirement that all monitoring work is carried out by a laboratory, certified by NATA, for the various analyses undertaken, and should indicate how independent confirmation of the results obtained by the primary laboratory for important parameters is made.</p>
6.3.2(a)	The health guideline values for which compliance is required under clauses 6.2.1(a) and (b)	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes all health guideline values for which NSW Health requires compliance. Comments under 6.2.1(a) are relevant.
6.3.2(b)	The aesthetic guideline values for which compliance is required under clauses 6.2.1(c) and (d)	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes all aesthetic guideline values for which compliance is required. Comments under Clause 6.2.1(c) are relevant.
6.3.3	Sydney Water must monitor Drinking water quality for the aesthetic guideline values of the 1996 Guideline that apply to the Physical characteristics of Drinking water	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes all aesthetic guideline values that apply to physical characteristics of drinking water.
6.3.4	The Drinking water quality monitoring must assess the quality of Drinking water in Sydney Water's water supply system. The sampling frequency and the	High compliance	The sampling frequencies and locations have been chosen on a basis of being representative of the quality of water supplied to customers and consumers. Compliance with this clause has also been independently audited by PPK (Independent Audit of Drinking Water Quality for 2000/2001). Their

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
	locations chosen for the monitoring should be such that the results are representative of the quality of water supplied to Customers and Consumers		<p>finding was full compliance. PPK found that sampling frequency for each of the 14 water delivery system was equal to or greater than the minimum requirement, suggested in the 1996 Guidelines for indicator micro-organisms, and that sampling sites were selected on the basis of providing a reasonable spatial spread within each zone and being representative of both circulating and dead end pipelines.</p> <p>The comments under Clause 6.2.1(a) regarding monitoring frequencies and water quality zone size are relevant. Because the monitoring is reported on a system-wide basis, it does not allow the assessment of the monitoring results on a more localised zone basis, as indicated in the 1996 Guidelines. For this reason compliance has been given as high rather than full.</p> <p>It is noted that the sampling locations are representative of water supplied to customers and consumers, comply with the requirements of the clause, and are consistent with the requirements of the 1996 Guidelines for routine monitoring. Because changes in water quality can occur within the customers' own pipes (eg corrosion of copper piping), the water quality results will not necessarily be representative of water that the customer will receive at taps within their property. However, as noted in the 1996 Guidelines, investigative monitoring would be required to determine such changes, and the auditor has assumed that the clause refers to routine monitoring rather than investigative monitoring.</p> <p>In the case of pesticides, the occurrence of pesticides, if they should be present, can be expected to relate to time of use in the catchments. The auditor understands that SCA is reviewing the usage of pesticides in the catchments and is undertaking monitoring of pesticides in the bulk water. It is recommended that, if the SCA monitoring results in detections of pesticides, Sydney Water ensure that the analyses undertaken include the pesticides detected, and that samples are taken at times indicated to be relevant from the SCA monitoring.</p>
6.3.5	Sydney Water must undertake the Drinking water quality monitoring for the period from the Commencement Date to 30 June 2001 and after that for each subsequent financial year	Full compliance	Monitoring was implemented for the period 1 Jan 2000 to 30 June 2001.

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
6.4	Drinking Water Quality – Reporting		
6.4.1	Sydney Water's water quality monitoring test results must be placed on its website on the internet for downloading by the public, free of charge and made available at its offices for access or collection by any person, also free of charge	Full compliance	Quarterly and annual summaries of monitoring results and daily test results for <i>Cryptosporidium</i> and <i>Giardia</i> are placed on the Sydney Water's website for downloading. These are also printed on demand, free of charge, if a person requests them at a Sydney Water office.
6.4.2	Sydney Water must produce an Annual Drinking Water Quality Report that reports on the Water supply system in relation to:	See below	For the period of the audit, only one annual report, which covers the period 1 July 1999 to 30 June 2000, was applicable. This report was reviewed for the audit.
6.4.2(a)	The health guideline values for which compliance is required under clauses 6.2.1(a) and (b)	High compliance	<p>Tables 1(a) (microbiological), 1(b) (other analytes) and 1(c) (disinfection products and byproducts) of the annual report provide a summary of compliance with the health guideline values for which compliance is required.</p> <p>The auditor notes that certain of the results are aggregated by system (Tables 1(a) and 1(c)), and some are aggregated for all systems together (Table 1(b)). Where results are aggregated by system, comments under Clause 6.2.1(a) are relevant. Because of this, a high rather than a full compliance has been assigned. Notwithstanding this, the water quality results are generally indicative of excellent water quality with respect to protection of the health of customers, and the aggregated results suggest that, on an individual zone basis, full compliance will be achieved.</p> <p>The auditor notes that aggregation of results can be acceptable in cases where all individual sample results are in compliance, because in such cases it follows that the results for each individual system must also be in compliance (this is the case for Table 1(b)).</p>
6.4.2(b)	The aesthetic guideline values for which compliance is required under clauses 6.2.1(c) and (d)	High compliance	Table 2 of the annual report provides a summary of compliance for the aesthetic characteristics for which compliance is required. These results are aggregated for all systems. The comments under Clause 6.2.1(a) are relevant and, by aggregating all systems information, an individual system is not able to be distinguished. Hence, 'High' rather than a 'Full compliance' has been assigned. Notwithstanding this, the water quality results are indicative of excellent water quality, and the

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			aggregated results suggest that on an individual zone basis, full compliance will be achieved.
6.4.2(c)	The aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of drinking water	High compliance	<p>Table 3 of the annual report provides a comparison of the results with the aesthetic guideline values that apply to the physical characteristics of drinking water, for which compliance is not required.</p> <p>The results are aggregated for all systems, and the comments under Clause 6.2.1(a) are relevant. By aggregating all systems information, an individual system is not able to be distinguished. However, the results are generally indicative of excellent water quality and, because for most of the parameters all individual sample results are in accordance with the guideline values, it can be concluded that the results for these parameters for each zone would be in accordance with the guideline values.</p> <p>In the case of pH, however, the percentage of samples meeting the adopted guidelines was 95.8%, and this suggests that there may be areas within the distribution systems that have a significantly lower percentage of samples meeting the guideline values. Because of this, a high rather than full compliance has been assigned. Notwithstanding this, the auditor notes that the 1996 Guidelines do allow for higher pH values (up to 9.2) to be accepted in certain situations, and the more detailed monitoring results (included elsewhere on the website) indicate that pH 9.2 is rarely exceeded.</p>
6.4.3	The Annual Drinking Water Quality Report must also include a summary of monitoring information, indicating water quality trends and problems, and a summary of system failures (significant and major water quality incidents) over the previous year and action taken to resolve them and how public health was protected	High compliance	<p>A summary of water quality trends for key parameters was included in the annual report posted on the website. When the report was first accessed, the trend graph for total and faecal coliforms was not able to be accessed for some reason; this was subsequently corrected.</p> <p>In regard to summarising significant and major water quality incidents, the report is very brief. The report notes there were none considered to have adversely affected public health, and that there were 13 different events..." that, if not managed appropriately, could have led to adverse impact on drinking water quality. On all occasions, they were investigated and action taken to avoid any impact on public health". No other information is provided on these events.</p> <p>The auditor considers that the summary provided is not informative and does not meet the full requirements of the clause, although the auditor acknowledges that the requirements of the clause are not well defined. The auditor recommends that Sydney Water clarify with IPART as to the reporting detail required under this clause.</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
6.4.4	The Annual Drinking Water Quality Report must be prepared by 30 November each year and must be placed on Sydney Water's website on the internet for downloading by the public free of charge and made available at its offices for access or collection by any person, also free of charge	Full compliance	<p>The Annual Drinking Water Quality Report for 1999/2000 was prepared by the 28 November 2000. The due date for the report for 2000/2001 is outside the current audit period.</p> <p>The 1999/2000 annual water quality report was available on Sydney Water's website for downloading. This copy of the annual report was used for the audit. It is also printed on demand, free of charge, if a person requests it at a Sydney Water office.</p>
6.5	Drinking Water – Planning		
6.5.1	Sydney Water must prepare, to the satisfaction of NSW Health, a Five Year Drinking Water Quality Management Plan within 5 months after the Commencement Date. Sydney Water must release a discussion paper in relation to the Five Year Drinking Water Quality Management Plan within 2 months after the Commencement Date and must engage in public consultation in accordance with clause 1.2.2 on the discussion paper	Full compliance	<p>The Commencement Date as defined in the Operating Licence is the 12 April 2000. The Five-Year Drinking Water Quality Management Plan was prepared in March 2000 and finalised and endorsed by NSW Health on the 12 September 2000. This is within the 5 months period after the Commencement Date.</p> <p>Community consultation on the management plan was initiated on the 4 August 2000 and completed on the 1 September 2000. Although this occurred after the 2-month period required by this clause, it did not delay the finalisation of the management plan.</p>
6.5.2	The Five Year Drinking Water Quality Management Plan must include strategies for the comprehensive management of the quality of Drinking water in Sydney Water's Water supply system, the aim of which is to reduce risk to public health and meet any aesthetic guideline values extended to Sydney Water in or by this Licence. It must also include an audit program for Potable water backflow prevention devices	Full compliance	<p>A Five-Year Drinking Water Quality Management Plan has been prepared. This is an excellent and comprehensive document.</p> <p>The Management Plan sets out the current situation of the supply system, identifies the emerging issues and performance gaps, and contains action plans for maintaining high quality drinking water.</p> <p>The Management Plan encompasses catchment management and bulk water delivery, through to water treatment and water distribution to consumers taps. It also addresses the areas of risk management, emerging water quality issues, monitoring and reporting, research and development, communication with stakeholders and incident management. The Management Plan is comprehensive, and seeks to address a great many issues. Such an approach can be expected to be challenging.</p> <p>Compliance with this clause has also been independently audited by PPK (Independent Audit of</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			Drinking Water Quality for 2000/2001). Their finding was full compliance. Although no audit program for backflow prevention devices is included, the Management Plan contains a discussion of the issues and refers to audit documents available within Sydney Water.
6.5.3	Sydney Water must prepare, to the satisfaction of NSW Health, an Annual Drinking Water Quality Improvement Plan for the Water supply system within one month after the Commencement date (12 May 2000) and after that by 31 March in each year, unless otherwise specified following the review under clause 6.5.5	Full compliance	The Annual Drinking Water Quality Improvement Plans have been prepared. Approval by NSW Health was documented in a letter dated 1 June 2000 and the 2001 Plan was prepared and submitted to NSW Health on 31 March 2001.
6.5.4	The Annual Drinking Water Quality Improvement Plan must incorporate system and operational changes needed to address problems identified through drinking water quality monitoring data and through periodic system inspections and evaluations, the aim of which is to reduce risks to public health and meet any aesthetic guideline values extending to Sydney Water in or by this Licence	High compliance	The Annual Drinking Water Quality Improvement Plan 2000 includes a systematic review of the treated water performance monitoring data for each of the water supply systems, identifies issues of most concern, and lists proposed actions and timeframes for completion of each of these actions. The Plan has a focus on treated water quality and does not, for example, refer to: <ul style="list-style-type: none"> - the bulk water quality, even though the bulk water quality did not comply with the requirements of the Bulk Water Supply Agreement for some of the supplies (particularly for algae); or - the performance and reliability of treatment systems (for example, whether there were periods in which treatment systems, such as disinfection systems, did not comply with essential performance targets). Because an objective of the Plan is to reduce risks to public health, it is considered that such information should be considered in the Plan and a 'High', rather than 'Full', compliance has been assigned.
6.5.5	The Annual Drinking Water Quality Improvement Plan must be reviewed as part of the Mid term review under clause 2.3.1 to assess its continued effectiveness and	No requirement	Mid term review is outside the current audit period.

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
	whether there is a continued need for the plan each year		
6.5.6	Sydney Water must prepare, to the satisfaction of NSW Health, a Drinking Water Quality Incident Management Plan, within 1 month after the Commencement Date which must remain in place until any new plan is developed in agreement with NSW Health	Full compliance	A Drinking Water Quality Incident Management Plan was prepared and internally approved on 2 July 1999. NSW Health has made comments on the plan and their comments have been subsequently incorporated. A copy of the document is available for all staff in the DWQMS via the Sydney Water intranet.
6.5.7	The Drinking Water Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking water incidents including media and stakeholder liaison and any notification of public health advice received from NSW Health to Customers	Full compliance	The Drinking Water Incident Management Plan includes procedures and protocols to deal with drinking water quality incidents. During the audit period, joint incident management exercises were conducted between NSW Health and Sydney Water that demonstrated effectiveness of the plan.
6.6	Environmental Water Quality		
6.6	Sydney Water must meet the environmental water quality requirements for any discharges or water releases by licences issued to it by the EPA or the Department of Land and Water Conservation (DLWC).	High Compliance	<p>The EPA has issued 31 Environmental Protection Licences to Sydney Water. These Licences cover:</p> <ul style="list-style-type: none"> • 27 licences are granted to regulate discharges from the sewage treatment plants and reticulation systems; • 2 licences are granted for discharges at water filtration plants at Cascades and North Richmond; and • 2 licences are granted for the application of herbicide spraying at Botany wetlands and Rouse Hill. • Sydney Water reports compliance with the EPA licences to the EPA on an annual basis as a requirement of the licences. Sydney Water advises that it reported ten non-compliances to the EPA with water quality requirements set by the licences, for this audit period. In accordance with the EPA reporting requirements, Sydney Water reported the reasons for non-compliance, actions taken to prevent, control or mitigate the non-compliance and the actions taken to prevent recurrence of the non-compliance.

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>This low number of non-compliances against the number of environmental discharges demonstrates a high level of compliance with the requirements of this Clause.</p> <p>The EPA confirmed that the non-compliances did not cause environmental harm and that in all cases the EPA was satisfied with the explanations provided by Sydney Water for the licence non-compliances and the actions proposed by Sydney Water to prevent recurrences of the incidents.</p> <p>Further, Sydney Water manages all aspects of the sewage treatment plants through an integrated management system certified to ISO14001 and its water filtration plants through ISO 9001.</p> <p>The DLWC has issued Water Management Licences to Sydney Water. The licences do not impose environmental water quality requirements for discharges or water releases. Therefore with respect to DLWC licences, there is no requirement under this Clause.</p>
6.7	Other Grades of Water		
6.7.1	Other Grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee	High compliance	<p>Other grades of water supplied by Sydney Water include water for irrigation of parks, racecourse and golf courses, agricultural irrigation, industrial reuse and domestic reuse. A number of guidelines are relevant and each are discussed separately.</p> <p>Water for irrigation reuse is currently supplied to a council park, the Warwick Farm racecourse, 5 golf courses, agricultural irrigation at the University of Western Sydney and at a farm in Picton. The water for these schemes should be supplied in accordance with the NSW EPA guidelines for “The Utilisation of Treated Effluent by Irrigation”. The monitoring of water quality for these schemes is conducted at the sewage treatment plants that supply the water. Approximately 6 months of water quality data from each of the relevant sewage treatment plants, namely Picton STP, Penrith STP and Richmond STP were reviewed by the Auditor to confirm compliance. The compliance of the water quality has been assessed on the following criteria from the NSW EPA guidelines:</p> <ul style="list-style-type: none"> pH = 6.5 to 8.5 Faecal coliform = Upper limit < 5000 org/100ml (disinfection level B for irrigation of grass and landscaped areas) Total N = < 50 mg/L (low strength effluent) Total P = < 10 mg/L (low strength effluent)

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>Review of the water quality data indicates general compliance with the above criteria, with some exceedences as follows:</p> <ul style="list-style-type: none"> • Picton STP: 50% of the samples exceeded the upper pH limit of 8.5, with a maximum pH of 10; • Penrith STP: one of 35 samples exceeded the faecal coliform limit of 5000 org/100 mL (6000 org/100 mL); and • Richmond STP: Two of 30 samples exceeded the faecal coliform limit (25000 and 6900 org/100mL). <p>It is considered that the exceedences are minor and a High Compliance has been achieved for the supply of these recycled waters.</p> <p>An agreement between Sydney Water and one of the users was reviewed (Dunheved golfcourse). The agreement included a clear statement of what the water was and was not suitable for, and that the user must not use it for purposes other than those agreed.</p> <p>Water for domestic reuse is currently supplied to residences in the Rouse Hill development area. The water for this scheme is supplied under the “NSW Guidelines for Urban and Residential Use of Reclaimed Water - NSW Recycled Water Coordination Committee”, which require:</p> <ul style="list-style-type: none"> • Faecal coliform = < 1 org/100mL • Total coliform = < 10 org/100mL (95% of samples) at the STP • Virus = < 2 in 50 L • Parasites = < 1 in 50 L • pH = 6.5 to 8.0 • Colour = < 15 TCU • Free residual chlorine = < 0.5 mg/L (at point of use) <p>Sydney Water carries out monitoring at both the Rouse Hill sewage treatment plant and in the reticulation system. Water quality data for selected months was compared against the Guidelines, and indicated:</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Full compliance with all microbiological quality criteria, ie, Faecal and Total Coliforms, virus and parasites; and colour. Minor exceedences with regard to pH and free chlorine residual. For pH, 3 out of 21 samples recorded pH exceeded 8.0, and for free residual chlorine, 52 out of 117 samples exceeded 0.5 mg/L. The auditor considers these exceedences to be minor: the pH upper limit is set to ensure a high disinfection efficiency and the microbiological results indicate that disinfection does not appear to have been compromised, and the free residual chlorine limit is set primarily on the basis of aesthetic quality. The most important goal is to achieve microbiologically safe water with adequate disinfection, which the microbiological monitoring results suggest has been achieved. <p>The Guidelines also have requirements for appropriate system management, control and monitoring. Sydney Water has:</p> <ul style="list-style-type: none"> Achieved ISO 9001 accreditation for the operation and management procedures at the Rouse Hill STP; carried out an extensive public education campaign prior to the introduction of the reclaimed water into the distribution system; this included community leaflets and plumbing guidelines for tradesmen; carried out an extensive cross-connection audit of all properties within the supply area prior to putting the system "live". <p>Despite above efforts, Sydney Water noted that a cross connection was found subsequent to the introduction of the reclaimed water into the system, suggesting that procedures could be further improved.</p> <p>Water for industrial use is currently supplied to BHP Wollongong for slag quenching, under a written agreement between Sydney Water and BHP. The water for this scheme should be supplied in accordance with "The Guidelines for Sewerage Systems – Use of Reclaimed Water, National Water Quality Management Strategy". The guidelines contains no specific requirements for industrial reuse other than that the water must be supplied according to individual agreements set up between the supplier and the end user.</p>

Table 6.2: Water Quality – Part 6 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>It is concluded that the other grades of water supplied by Sydney Water generally in accordance with the relevant guidelines and requirements, and although some exceedences occur, these are minor. A high compliance has been assigned.</p> <p>The EPA has confirmed that it is satisfied that the quality of treated effluent supplied to the effluent re-use schemes is of a suitable quality, and that the schemes are properly operated.</p>
6.7.2	Minimum standards and guidelines to regulate the supply of Other Grades of water must be identified in the Mid term review. Where the Minister is of the opinion that the minimum standards and guidelines for the supply of Other Grades of water identified in the Mid term review are appropriate, such standards and guidelines must be observed by Sydney Water as a condition of this Licence	No requirement	Mid term review is outside the current audit period.
6.7.3	Where there is a conflict between any of the guidelines, requirements or standards applying to Sydney Water under clause 6.7 the Minister's decision will prevail	No requirement	Sydney Water advised that no conflict issues have arisen in the audit period.

Table 6.3: Water Quality – Ministerial Directives

ID	Requirement	Compliance	Findings
M1	“...I require a status report on the implementation of those actions (proposed in the Improvement Plan to ensure the maintenance of drinking water quality at North Richmond) by the conclusion of the 2000 Annual Drinking Water Quality Improvement Plan period (30 June 2001).”	High compliance	<p>Sydney Water provided a status report to the Minister on 21 August 2001 after the conclusion of the Improvement Plan period (30 June 2001). The report advised on actions during the period. The auditor has assumed that the timing of the report is acceptable. The report advised that all seven key improvement actions have been progressed, with 5 of the actions completed by the proposed completion date, and 2 having a few months time slippage and being scheduled for completion after the audit period. The system complied with the Guidelines' performance standards for total coliforms as well as thermotolerant (faecal) coliform for the calendar year 2000 and the initial 6 months of 2001.</p> <p>It can be expected that the effectiveness of the actions and the performance of the system will be able to be judged after the next audit period when all actions are in place over the summer period.</p>
M3	“...I note that there is a difference of opinion between the auditor and AWT as to the meaning of the term “independent validation” and how the process of independent validation should be pursued. So that I may be apprised of developments in this scientific debate, I require regular updates. The first of these updates is to be provided by 31 December 2000. If there is a significant shift in the scientific community I expect to be informed immediately...”	Full compliance	<p>An update regarding the considerations and actions undertaken by Sydney Water was provided to the Minister by way of a memorandum from the Managing Director on 22 December 2000. In summary, it is noted:</p> <ul style="list-style-type: none"> NATA has provided advice to Sydney Water regarding its requirements. AWT was accredited by NATA in mid 2000 and must undertake 6 proficiency tests per year to maintain this accreditation. AWT has completed the required tests. Accreditation is only given for the detection and confirmation of <i>Cryptosporidium</i> and <i>Giardia</i>; not viability and speciation. Industry workshops have concluded that <i>in vitro</i> human cell culture represent the best possible option for measurement of oocyst viability, and the Water Services Association of Australia (WSAA) is coordinating, with the US EPA, the development of a multi-lab proficiency trial of human cell culture techniques. It is to progress trials to compare currently available Polymerase Chain Reaction (PCR)-based detecting procedures for distinguishing genotypes infectious to humans. <p>Sydney Water also advised the auditor that:</p>

Table 6.3: Water Quality – Ministerial Directives

ID	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Macquarie University is undertaking further work in Australia on another rapid method viability test known as FISH. Additional independent validation of AWT's testing results is now available by the Independent Laboratory, which in July 2000 commenced testing a percentage of duplicate samples and verifies any microscope slides identified as positive by AWT. The latter has occurred in one instance, and the independent laboratory confirmed the presence of <i>Cryptosporidium</i>, although the numbers detected varied and this is the subject of further discussion and reporting by NSW Health. <p>To the auditor's knowledge there has not been a significant shift in the scientific community's view regarding independent validation and Sydney Water has not been required to advise the Minister accordingly.</p> <p>The auditor notes there are differing views regarding what constitutes independent validation. In the environmental field when sampling and analysis is being undertaken for statutory purposes it is generally required that at least 5% of duplicate environmental samples be analysed by an independent laboratory for the full range of analyses that are being relied upon. In the water industry this has generally not been the practice, although the importance of independent comparative testing is becoming recognised.</p> <p>In the case of pathogen testing, because most samples will not contain organisms and duplicate water samples are unlikely to contain the same numbers of organisms, the most direct method of comparative testing is to test samples to which organisms have been added. This approach is being adopted in the proficiency testing being managed by NATA, which involves checking laboratories against one another in analysing samples containing known numbers of <i>Cryptosporidium</i> and <i>Giardia</i>. Although this process does not involve independent analysis of water samples taken from the distribution system, the auditor considers the approach being taken by NATA to be the best checking method that can be practically carried out for such pathogens.</p> <p>An independent laboratory is undertaking the analysis of duplicate samples of water taken from the supply system. These analyses provide a further independent check of the absence of <i>Cryptosporidium</i> and <i>Giardia</i>. However, because most of these samples will not contain organisms, it does not provide as direct a measure of the ability to detect organisms as the NATA proficiency</p>

Table 6.3: Water Quality – Ministerial Directives

ID	Requirement	Compliance	Findings
			<p>testing. Further, in situations where organisms are detected infrequently and at low numbers, it can be expected that duplicate water samples will contain discrepancies (if organisms happen to be present). There is potential for uncertainty to occur if one laboratory detects organisms and the other does not, even though this may be expected.</p> <p>The auditor concludes that the requirements for independent validation of <i>Cryptosporidium</i> and <i>Giardia</i> have been met.</p>
M4	"...I require AWT's laboratory to continue to satisfy the NATA requirements to retain accreditation."	Full Compliance	Advice from Sydney Water indicates that AWT has maintained accreditation for <i>Cryptosporidium</i> and <i>Giardia</i> . Refer also to comment under the previous Ministerial Requirement.
M5	"...I require Sydney Water to seek information from NATA in relation to AWT's methodology and processes and provide me with this information by 31 December 2000."	Full Compliance	Information was sought by Sydney Water from NATA regarding AWT's methodology and processes with respect to the analysis of <i>Cryptosporidium</i> and <i>Giardia</i> , and was provided to the Minister by way of a memorandum from Sydney Water's Managing Director on 22 December 2000.
M10	"...I require six monthly reports on the progress of the Backflow Prevention program. The reports are to be provided to me at the same time as the regular Operating Licence Compliance reports. I will be looking for a level of assurance that Sydney water is being diligent in the management of the program."	Full Compliance	<p>Sydney Water has provided six-monthly progress reports to the Minister. Progress reports for 31 December 2000 and 30 June 2001 were submitted to the Minister with the regular Operating Licence Compliance reports on 9 April 2001 and 5 September 2001, respectively.</p> <p>Sydney Water endeavoured to provide the Minister with assurance of diligence toward this program as follows by:</p> <ul style="list-style-type: none"> • developing a risk based approach to identifying the higher risk premises to target; • maintaining and monitoring a program to facilitate compliance by customers with Sydney Water's policy on backflow prevention; and • commissioning an inspection program (audit) to check compliance with the policy following customer self reporting and installation of backflow prevention devices . <p>These actions are discussed further in Section 6.4.</p>

6.4 DISCUSSION

6.4.1 Water Quality Management

A central aspect of the Licence is to ensure that Sydney Water adopts management systems which will provide assurance that water quality complies with requirements. In particular, the Licence requires:

- A Five-Year Drinking Water Quality Management Plan which includes strategies for the comprehensive management of the quality of Drinking water in the water supply system, and has the aim to reduce risk to public health and meet any aesthetic guideline values; and
- An Annual Drinking Water Quality Improvement Plan which includes system and operational changes needed to address problems identified through drinking water quality monitoring data and through periodic system inspections and evaluations, and has the aim to reduce risks to public health and meet any aesthetic guideline values.

Towards this end, Sydney Water has taken an active role in the water industry in supporting the introduction of improved water quality management systems, and has decided to base its management systems on achieving certification under ISO 9002. The debate in the industry has indicated that certification to ISO 9002 may not be sufficient to provide assurance on water quality, and risk management systems need to be included within the ISO 9002 framework.

Sydney Water has recognised this, and has been one of the first water authorities in Australia to undertake a systematic process of identifying risks to water quality and the requirements for addressing these risks. The development of management systems is a continuing process, in which areas for improvement are identified and implemented.

Observations are:

- Sydney Water has carried out an excellent program of risk identification and the development of improvement works. Overall, the focus of this work (for example, Final Risk Management Plan for each of the Supply Systems) has been on identifying improvement works, but does not appear to have been directly connected with operational management. Examples of such operational management could include: using the risk assessment to systematically identify the important control points; the setting of control limits for operational parameters; and the definition of management issues (such as who is responsible for monitoring, reporting and reviewing the results, and the actions that are to take place if the control limits are not complied with). By way of further example, a Standard Operating Procedure for mains flushing reviewed by the auditor did not include the latter items.
- In respect of assuring the quality of the bulk raw water, Sydney Water relies on SCA to provide water in accordance with the Bulk Water Supply Agreement (BWSA). However, the bulk raw water quality does not meet the requirements of the BWSA at all times suggesting that there is room for improvement. SCA also manages its systems using a risk-based approach, and Sydney Water and SCA liaise on water quality issues through the Joint Officers Group. However, there are a number of limitations:
 - Although Sydney Water liaises through the Joint Officers Group, it does not appear that a process has been set up by which Sydney Water confirms that SCA is carrying out the various actions and control measures necessary to achieve compliance with the BWSA.
 - The SCA risk management plan is still under development. The linkages between sources of pollutants and their effect on bulk water quality are yet to be well established by SCA, and it is not clear that SCA has sufficient control to ensure that the requirements of the BWSA will be met.

This suggests the following areas of improvement by Sydney Water with regard to water quality management.

- Extension of the risk assessment process to provide clear linkages between the risks, their operational control, and verification that control has been achieved.
- Establishment of a process to confirm that SCA is carrying out the various actions and control measures necessary to achieve compliance with the BWSA.

6.4.2 Monitoring and Reporting

Sydney Water undertakes a major treated water quality monitoring program and makes summaries of the monitoring findings readily available to the public. Sydney Water advises that it also undertakes considerable other monitoring for operational purposes, such as the day to day performance of the water treatment plants.

It is noted:

- In preparing summaries of data, considerable amounts of data are aggregated and this can result in information on local variations being lost. This is discussed in Section 6.5.

In terms of providing assurance that the water complies with requirements, Sydney Water relies on its management system and the proper operation of various controls. Towards this end, Sydney Water advises that it undertakes a large amount of day to day operational monitoring and reporting. This monitoring can be expected to provide Sydney Water with the most direct and immediate measure of performance. For example, the monitoring includes such items as the operation of disinfection systems and the outlet turbidity of filters that can confirm that short-term outages in critical control systems have not occurred. Thus, this information can provide valuable additional confirmation that compliance with the 1996 Guidelines has been achieved, and it is therefore recommended that the next audit include a review of relevant operational monitoring results.

6.4.3 Backflow Prevention Devices

Risk Based Approach

Sydney Water adopted a risk based approach in identifying and prioritising new and existing commercial and industrial premises where a medium to high risk of contaminating the water supply exists. AS 3500.1 –1992, (*Table 4.4 – Containment Protection hazard rating and selection of backflow prevention devices backflow prevention protection provided at the property boundary to protect the regulatory authority's water supply from contamination*) was used to prioritise industry sectors to be targeted. Premises that fall within the high to medium risk industry sectors were identified using 'Australia on Disk'.

Sydney Water recognise that not all premises within the targeted industry sectors may be identified and continue to refine their list of premises to be targeted.

Sydney Water identified 9261 premises to be targeted, 8372 were ranked as high risk and 889 were medium risk.

Programming and Progress

Sydney Water does not have a target date for the total completion of the backflow prevention program as it believes this will be an ongoing long term program and the total number of premises targeted will increase as the Sydney Water database improves. The key milestones and performance against these milestones are as follows:

- As at 30 December 2000, 5176 premises were due to comply. Sydney Water report that 2795 (**54%**) of customers actually complied.
- As at June 2001, 6883 premises were due to comply. Sydney Water report that 5438 (**79%**) of customers actually complied. Of the 5438 customers that complied, 2910 high-risk premises and 310 medium risk premises required the installation of backflow prevention devices. The remaining 2263 premises satisfied the Sydney Water policy on backflow prevention without modification.

Sydney Water is undertaking actions on the premises that do not comply with the Sydney Water policy on backflow prevention and include:

- Granting of extensions due to operational constraints. Installations to take place during business closedowns or for larger installations - longer lead times have been granted due to high capital costs for some premises.
- Notifications of disconnection have been issued, and continue to be issued, and AWT Plumbing and Drainage has inspected premises to confirm if premises require the installation of devices.

Backflow Prevention Device Audits

Sydney Water commissioned AWT Plumbing and Drainage to undertake inspections of installed Backflow Prevention devices to ascertain whether compliance has been achieved. The AWT inspections revealed that 20% of installations do not meet the Sydney Water policy on backflow prevention devices.

Sydney Water has developed strategies to increase compliance of installations. These include targeted audits of installations by plumbers found to be defective in previous audits and compliance reports, on an annual basis, from registered plumbers to confirm the backflow prevention devices are functioning effectively.

6.5 FACTORS AFFECTING COMPLIANCE

In general, the water supplied to almost all customers is of excellent quality with respect to the health-based parameters, and is clear and colourless entering the distribution system. This reflects a reasonable raw water quality for the major portion of the supply and a good level of treatment in the water treatment plants.

For some Licence clauses a High, rather than Full, compliance has been assigned. The reason why this has occurred has been due to the approach taken for reporting monitoring results rather than poor water quality. The key issues are:

- The 1996 Guidelines indicate that results should be broken down into groupings which are in the order of 100,000 population or less. This allows local variations to be distinguished, noting that it can be unacceptable to have even a small number of consumers being supplied with water which does not comply with the health-based guideline requirements. Sydney Water advises that it is able to (and does) report water quality information, including customer complaint information for internal operational purposes, on a local area basis, and uses this local information when determining system mains cleaning requirements to improve water quality.
- Reporting in the Annual Report – the Report notes that a number of water quality events have occurred, but no information has been provided on them and the actions that took place in response.

6.6 RECOMMENDATIONS

6.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R6.1 Review the basis for water quality sampling and reporting with NSW Health to ensure that the program provides adequate confirmation of compliance on a local area basis and is in accordance with the 1996 Guidelines.
- R6.2 Clarify, with IPART, as to the detail required for the purposes of the Annual Report with regard to water quality incidents and events.
- R6.3 Establish a process to confirm that Sydney Catchment Authority (SCA) is carrying out the various actions and control measures necessary to achieve compliance with the Bulk Water Supply Agreement (BWSA).

6.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R6.4 Ensure that, if the SCA monitoring detects pesticides, then analyses undertaken by Sydney Water include the pesticides detected, and that samples are taken at times indicated to be relevant from the SCA monitoring.
- R6.5 Include in the *Annual Drinking Water Quality Monitoring Plan* an improved definition of the processes used for quality control with respect to sampling and analysis. Further, the plan should reference a supporting document that justifies and provides evidence supporting the selection of analytes for monitoring, particularly for substances such as disinfection by-products and compounds associated with activities that take place in the catchments as have been identified in the SCA catchment audit and Risk Management Plan.
- R6.6 Extend the risk assessment process to provide clear linkages between the risks, their operational control, and verification that control has been achieved.
- R6.7 Include, as part of the information supplied to the next operational audit, a review of relevant operational monitoring results (such as chlorinator performance) to provide additional confirmation that the 1996 Guidelines for health-related parameters are being complied with.

7. SYSTEM PERFORMANCE

7.1 SUMMARY OF FINDINGS

Sydney Water obtained 'Full compliance' with the three System Performance Standards of water supply continuity, water pressure and sewer overflows, over the 18-month audit period. Sydney Water has well-structured and documented systems for monitoring and reporting the standards, and has had consistent programs in place over a number of years to ensure these standards are met.

Sydney Water obtained 'Full compliance' with respect to developing standards for low pressure areas by the specified time, and 'High compliance' with the standards developed, over the 18 month reporting period. Two of the Designated Low Water Pressure Areas (DLWPAs) did not comply with the standard, but across all DLWPAs an average compliance of 95% was achieved. The monitoring and reporting systems in place are the same as for the System Performance Standards above. Sydney Water obtained 'Full compliance' with the amended reporting requirements for these standards.

Sydney Water obtained 'High compliance' with progress on reducing the number of unsewered properties. The Minister has been kept informed of this progress through 6-monthly progress reports.

Sydney Water obtained 'Full compliance' with the requirement to submit an Asset Management Strategy to the Minister by 31 December 2000. 'High compliance' was obtained for the report coverage, which was required to: include the main components of the asset planning and decision making process; take into account reviews of system performance standards; and address deployment of the strategy. The strategy outlines a process that is consistent with generally accepted risk management principles for asset management. The Strategy only includes a preliminary outline of its deployment. The Strategy would benefit from improved cross-references to other key asset management documents, systems, strategies and plans; the addition of a review and updating process; and a hierarchy of plans. 'High compliance' is assessed with the requirement for progressive deployment of the Strategy. Substantial progress is being made in a range of tasks, although no detailed program for Strategy deployment apparently exists. It would assist in providing confidence in Sydney Water's progress with deployment, if such a program existed and was also linked the various Systemic Product Plans.

7.2 SUMMARY OF REQUIREMENTS

The requirements of Clauses 7.1 and 7.2 of the Licence are that Sydney Water ensures its systems comply with the following standards of service:

- 95% of properties connected to the water supply system will not have that connection affected by an interruption exceeding 6 hours.
- 98% of all properties connected to the water supply system will have water pressure at the main tap in excess of 15 metres head except in nominated low pressure areas.
- 96% of all properties connected to the sewerage system will not have their land affected by a sewage overflow caused by a Sydney Water sewer.
- In nominated low pressure areas, Sydney Water must develop standards for minimum water pressure and comply with them.
- Any other standards determined by the Minister.

In respect of Ministerial Requirements M2 and M9 respectively, Sydney Water is required to:

- Appraise the Minister of its progress in reducing the number unsewered properties, with due consideration to community requirements, environment and public health requirements, with regular progress reports.

- Provide a report by 31 December 2000 on Sydney Water's strategic framework of asset management, which covers the main components of Sydney Water's asset planning and decision making process, taking into account reviews of system performance standards, and addressing deployment of the strategy. Progressive development and deployment of detailed asset plans are to be undertaken over the next two years (from receipt of the report).

7.3 DETAILS OF COMPLIANCE

Table 7.1: System Performance – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	NA	No requirement.
(d)	Compliance by Sydney Water with the performance standards under clauses 7.1 and 7.2		Refer to Table 7.2.

Table 7.2: System Performance – Part 7 Licence Clauses

Clause	Requirement	Compliance	Findings
7.1	Compliance with Performance Standards		
7.1.1	Sydney Water must ensure that its Systems comply with the Standards for continuity, water pressure and sewage overflows in Schedule 4 or other such standards determined by the Minister under clause 7.3.	See below.	Refer to Findings below for each System Performance Standard set down in Schedule 4.
Schedule 4	Water Supply Continuity - Sydney Water must ensure that, on an annual basis, 95% of all properties connected to its water supply system will not have their connection affected by an interruption of water supply exceeding 6 hours.	Full compliance	Sydney Water reported 99.28% of properties were not affected for longer than 6 hours in the 2000 calendar year, and 99.52% in the fiscal year 2000/2001, thereby meeting this standard over the 18-month reporting period. Sydney Water has a well-structured and documented system for reporting this standard, and has consistent programs in place to ensure the standard is met. There is a low potential for errors in recording and reporting data, which will not significantly affect the reported statistic, or reduce the level of compliance.
Schedule	Water Supply Pressure - Sydney Water must ensure	Full compliance	Sydney Water reported 99.68% of properties had the required water pressure in the 2000 calendar

Table 7.2: System Performance – Part 7 Licence Clauses

Clause	Requirement	Compliance	Findings
4	that, on an annual basis, 98% of all properties connected to its water supply system will have water pressure at the main tap in excess of 15 metres head except in nominated low pressure areas covered under Clause 7.2.		year, and 99.81% in the fiscal year 2000/2001, thereby meeting this standard over the 18-month reporting period. Sydney Water has a well-structured and documented system for reporting this standard, and has consistent programs in place to ensure the standard is met. There is a low potential for errors in recording and reporting data, which will not significantly affect the reported statistic, or reduce the level of compliance.
Schedule 4	Sewage Overflows – Sydney Water must ensure that, on an annual basis, 96% of all properties connected to its sewerage system will not have their land affected by a sewage overflow on their land from, or as a result of a sewer owned or operated by Sydney Water.	Full compliance	Sydney Water reported 99.18% in the 2000 calendar year, and 99.04% in the fiscal year 2000/2001, thereby readily meeting this standard over the 18-month reporting period. Sydney Water has a well-structured and documented system for reporting this standard, and has consistent programs in place to ensure the standard is met. There is a low potential for errors in recording and reporting data, which will not significantly affect the reported statistic, or reduce the level of compliance.
7.2	Standards in Respect of Low Pressure Areas		
7.2.1	<p>Within 1 month after the Commencement Date, Sydney Water must develop standards that establish the minimum level of water pressure required for the following low pressure areas in Schedule 4:</p> <p>(a) Urban areas adjacent to reservoirs in the Blue Mountains.</p> <p>(b) Non-urban properties in Bayview, West Camden, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains.</p>	Full compliance	Sydney Water developed standards for low pressure areas and received approval from the Licence Regulator on 31 March 2000, before the Commencement Date of 12 April 2000.

Table 7.2: System Performance – Part 7 Licence Clauses

Clause	Requirement	Compliance	Findings
7.2.2	Sydney Water must comply with the standards developed under clause 7.2.	High compliance	<p>Sydney Water achieved the 90% compliance requirement in all but two of the DLWPAs (Bayview and Llandilo), and achieved an average compliance across all DLWPAs of 95.10%. A separate compliance grading for each DLWPA is not considered warranted due to the small number of properties in some areas.</p> <p>The measurement and reporting of the standard is reasonably accurate and reliable. Some inaccuracies are expected to have occurred in recording and reporting of the standard, particularly during the initial part of the 18 month reporting period, prior to the commencement of the application of the standard on 12 May 2000. The measurement system for these standards is the same as for the standard for Drinking Water Pressure, and hence the same audit comments with respect to measurement accuracy also apply.</p>
7.2.2 cont.	Sydney Water must comply with such other standards determined by the Minister under clause 7.3.	Full compliance	<p>Some modifications to reporting requirement and clarification of definitions in the standards in Clause 7.2 have been made, and Sydney Water is reporting in accordance with these standards.</p> <p>A review of performance standards has been undertaken, with the amended standards applicable from 1 July 2001.</p>

Table 7.3: System Performance – Ministerial Directives

ID	Requirement	Compliance	Findings
M2	“...to ensure that I remain fully appraised of Sydney Water's progress in reducing the number of unsewered properties, with due consideration to community requirements, environment and public health requirements, I look forward to regular progress reports on this matter.”	High compliance	Sydney Water has made progress on reducing the number of unsewered properties, in accordance with established programs. The Minister has been kept informed of progress through 6-monthly progress reports.
M9	“...I require a report on Sydney Water's strategic framework of asset management. This report is to cover the main components of Sydney Water's asset planning and decision making process, taking into account reviews of system performance standards. The report will also address deployment of this strategy throughout Sydney Water's operations, maintenance and asset creation plans.”	High compliance	Sydney Water has submitted the strategy to the Minister. The strategy covers the main components of asset planning and decision making, and takes into account reviews of system performance standards, by implication. The strategy is consistent with generally accepted risk management principles for asset management. Cross-references to other key documents would be beneficial. The report is perceived to focus on what exists within Sydney Water, and only includes a preliminary outline of the main areas for improvement and the overall timeframe for deployment. It does not provide adequately for implementation of improvements or deployment of the strategy. The strategy would also benefit from a review process and formalised reporting on progress.
	“Progressive development and deployment of detailed asset plans within the strategy is to be undertaken over the following two years from the receipt of the report.”	High compliance	Progressive development and deployment of detailed asset plans within the Strategy is to be undertaken by December 2002. Substantial progress is being made on a range of tasks. Although, it was not demonstrated how Sydney Water manages this process internally as the status report was prepared specifically for the audit. Many of the completion dates are specified no more clearly than “late 2002”. No detailed program for Strategy deployment apparently exists. It would assist in providing confidence in Sydney Water's progress with deployment, if such a program existed. Clarity of purpose could also be improved by showing the interrelationship between Sydney Water's various strategies/programs.
	“...I require this report by 31 December 2000.”	Full compliance	The report was submitted to the Minister under cover of a memo dated 22 December 2000.

7.4 DISCUSSION

7.4.1 Compliance with System Performance Standards

7.4.1.1 General

For service standards, the audit generally covered the following aspects:

- Existence of appropriate procedures, guidelines or checklists for the relevant standard.
- Appropriateness of Sydney Water's interpretation of Licence requirements.
- Methods and systems for data recording.
- Accuracy of recording including potential for inaccuracies or incorrect reporting.
- Understanding of staff involved in compliance reporting and data recording (management and depot and/or call centre staff), as appropriate.
- External and internal auditing of requirements.
- Relevant staff training.
- Data collation and reporting reliability.
- Strategies, plans and programs in place to ensure compliance with each standard is maintained in the future.

General comment on Sydney Water's relevant processes for measurement, reporting and ensuring compliance are set out in this section, as they are common to all the system performance standards. Specific issues for each standard are provided under subsequent sections or discussed in greater detail in **Appendix I**.

Documentation

Overall, Sydney Water has comprehensive documentation for the collecting, collating and reporting of data for service standards under its Operating Licence Measurement and Reporting (M&R) System.

The system is certified to ISO 9002: 1994 and is being updated to accord with ISO 9001: 2000.

The head document is the Customer Services and Asset Management's Quality Assurance Manual for Compliance Measurement and Reporting, and there are associated procedures and work instructions for the various service standards. (Note: The Manual provided to the Auditors, issued 2/11/00, has not been updated to provide for IPART replacing the role of the Licence Regulator).

Staff are allocated roles specifically, or partially, to manage compliance with the Licence, and are required to sign off each stage of reporting.

Data collection and reporting systems

Data collection and reporting systems used by Sydney Water for performance standards are:

- Job Cards for each instance/job/service request attended by Sydney Water staff or contractors. The Job Card is the primary document for recording the type of job, details of properties affected, and times of response and activity.

- Pressure recording gauges, which are used as the primary means for recording instances of low water pressure.
- Computer-based Works and Asset Management System (WAMS) which includes the HYDRA Geographical Information System and MAXIMO database, and provides for management and control of asset data, maintenance jobs, standards data, and customer rebates. This system is linked to the customer database, ACCESS.
- Various computer spreadsheets for collation and reporting of statistics.

WAMS has only been in full operation since 3/12/00. Prior to that time several recording systems were used which were not integrated and required manual reconciliation of records. These systems were previously audited in the 1999 compliance audit.

The Job Card process was assessed by the auditors. Sydney Water maintains hard copies of Job Cards, which are meant to accord with electronic files. Verification checks are made through WAMS to ensure there are no outstanding/uncompleted Job Cards. An audit of a random selection of Job Cards was made to check consistency with electronic data upon which the compliance reports are based. No significant discrepancies were found.

Staff Understanding

Staff interviewed during the audit included Sydney Water nominated auditees, largely drawn from management and compliance areas, and other staff selected by the auditors at the Ryde depot and the Liverpool call centre.

Management and compliance staff demonstrated a full understanding of the measurement and reporting process, as relevant to their responsibility.

Staff at the Ryde depot understood the purpose of the measurement and reporting process, were able to demonstrate the Job Card system, recognised the importance of accurate data, and indicated they had training in relevant aspects of reporting of performance standards.

Call centre staff were interviewed at the Liverpool Call Centre. The auditor also monitored staff taking calls from customers while observing the data entry associated with these calls. The auditor reviewed the training material used to induct operators and spoke to the centre supervisors. Staff appeared well trained and competent in dealing with customers and operating WAMS. The call monitoring system, used to manage calls to the various operators and teams, appears to meet the needs of Sydney Water.

Audits

Internal and external audits of the M&R system are conducted and evidence was provided of:

- Triennial audit in July 2001 by QAS.
- Surveillance audit in February 2001 by QAS.
- Internal audit of water pressure and sewer surcharge in July 2000.

Review of the Internal Audit Schedule provided by Sydney Water indicated that either the schedule has not been updated or planned audits for service standards M&R or data traceability have not been undertaken since July 2000. The audit concerns or improvements identified also require entries to be completed.

Staff Training

Senior staff interviewed during the audit indicated that internal training was conducted for all relevant staff in:

- Understanding relevant elements of Sydney Water's compliance obligations and reporting requirements, including definitions.
- Understanding the need for accurate recording of data in accordance with procedures and relevant guidelines.

Sydney Water was not able to provide evidence of staff training programs in each area/section of the business. Training records are advised as being held for each person and sample evidence was provided of this. However, it was not clear to the auditors how Sydney Water ensures relevant training is maintained for all staff.

Reporting

The Operating Licence Compliance Report by Sydney Water was prepared for an 18-month period from 1 January 2000 to 30 June 2001. Performance was reported for two calendar years (1999 and 2000) and two fiscal years (1999/2000 and 2000/2001). Whilst there is no specific compliance assessment for the 18 month reporting period, performance over the period can be inferred from the other data presented. It is assumed that this form of presentation has been accepted by IPART, even though Sydney Water provided no evidence. The report is considered by the auditors to be presented correctly as all standards are specified for compliance on an annual basis.

There does not appear to be an agreed definition of "properties connected" with IPART. The auditors consider that this requires clarification, although its significance changes with the modified standards applicable from 1st July 2001. It is considered that unconnected vacant land and connected services that do not relate to a "property" do not meet a reasonable interpretation of the definition. Even so, it is understood that vacant properties are counted in properties affected, and hence the reported compliance percentage for each System Performance Standard is not likely to be greatly affected.

The data is extracted from the Automated Corporate Customer Enquiry Service System (ACCESS). Sydney Water provided calculation of the number of properties. This system is independently audited by the Auditor General's Office of NSW, and is not further audited herein.

Strategies, Plans and Programs to Ensure Compliance

With respect to Sydney Water "ensuring" that its systems comply with the standard, this is interpreted by the auditor as Sydney Water having strategies, plans and programs in place to maintain or improve the level of service delivered. Sydney Water has developed such systems for each of the performance standards.

Summary

In summary, the overall systems, processes and procedures for measurement and reporting of compliance for service standards was found to be well documented, structured and integrated, and complied with by staff. Some improvements could be made to ensure that the reliability of the system is maintained at a high level, including the conduct of planned internal audits and comprehensive records of required and completed training in relevant processes. Further specific comments are detailed under each standard below.

7.4.1.2 Drinking Water Continuity

Interpretation

The Sydney Water interpretation of the definition of 'interruption' is no water, i.e. a complete loss of supply. Sydney Water's definitions for times of interruption, times of restoration, number of properties affected, and the compliance formula are considered reasonable.

Measuring and Recording of Data

The recording of data is via the Job Card system (Job Cards completed by field crew team leaders) and WAMS (data processing by scheduler/depot staff). There is potential for human error in accurately recording time off/time on for a water supply interruption, and this may cause some inaccuracies in reported statistics, although these are not considered to be significant. Validation checks of job records by Sydney Water were implemented during the reporting period via the Quality System and Sydney Water is developing a process to ensure job records in WAMS are complete. Checking of a sample of Job Cards by the auditor detected no errors/errors and/or inconsistencies between Job Cards and WAMS records.

Collation and Reporting of Data

Calculation of reported performance standards from monthly data was found to be correct.

Strategies, Plans and Programs to Ensure Compliance

Historically, over the past 4 years, the number of water main breaks has gradually reduced (although breaks only cause a portion of supply discontinuities), and the number of properties affected by a discontinuity has slightly increased (annual and seasonal climatic factors have a major impact on these figures). During that period, Sydney Water has increased its expenditure on water main renewals (to \$43.3M in 2000/01) and the length of water mains renewed (to 63km in 2000/01). Processes are in place to identify poorly performing mains for replacement, based on historical failures or system analysis. Sydney Water has an internal benchmark of 3 breaks in two years, which triggers an investigation of a water main for renewal. With respect to maintenance to meet the 6-hour maximum shutoff standard, Sydney Water has had a contract (2000/2001) or an alliance (before 30/6/00) with Australian Water Technologies (AWT) to undertake maintenance.

Summary

Overall, Sydney Water has reported that it has readily achieved the required standard for drinking water continuity, and the audit finds that the measurement and reporting of the standard is accurate and reliable, with a reasonably high degree of confidence at the time of the audit. Adequate systems appear to be in place to ensure that the standard is maintained and amended standards for 2001/2002 are met. Sydney Water fully complies with this standard.

Confidence in reported performance could be improved by the provision of evidence of full conduct of planned internal audits and records of staff training, and the implementation of validation checks (such as completeness of jobs), the connectivity of asset to property in HYDRA, and data quality review of MAXIMO. Even so, the cumulative errors in the systems are not expected to be large, and not sufficient to cause non-compliance.

7.4.1.3 Drinking Water Pressure

Interpretation

The Sydney Water interpretation of the definition of this standard provides for reporting incidents during a single calendar day of water pressure at the main tap less than or equal to 15 metres head resulting from system deficiencies, excluding short term fluctuations lasting less than 15 continuous minutes. Operational problems resulting in low pressure rectified within 7 days are excluded (refer to "other standards" in Section 7.4.1.6 below), as are problems arising from private water services/connections. It is noted that the 7-day period has been reduced to 4 days in the amended standard for 2001/2002. Properties in Designated Low Water Pressure Areas (DLWPAs) are excluded.

The key to the interpretation is that the standard is agreed with the Minister as a reflection of water supply system capability rather than operational difficulties or short-term fluctuations that can occur. Sydney Water's interpretations of the standard, number of properties affected, and the compliance formula, are considered reasonable.

Measuring and Recording of Data

Low-pressure instances can be detected through pressure monitoring stations, water system zone modelling and service requests and complaints.

- Pressure monitoring stations, comprising 64 telemetered stations, 135 wound chart recorders, 60 data loggers, 95 portable data loggers, and 167 reservoir pressure telemetered stations. Sydney Water is replacing all the older technology stations (wound chart recorders and data loggers) and extending the network with 360 telemetered stations under the Integrated Instrumentation Control and Telemetry System (IICATS) project. The location of the monitoring stations is determined by Sydney Water to cover areas likely to experience low water pressure (e.g. elevated areas), through historical data or system modeling.
- Water system zone modeling. Sydney Water reports it has developed models for all water supply zones, and updates models as required in zones where development is occurring and additional water demands may cause water pressure reductions.
- Water pressure service requests and complaints. These are responded to by field staff and recorded under the Job Card system as for water continuity. Temporary gauges may be installed to record low pressure. Very few instances of low pressure are determined from complaints or customer calls.

Pressure monitoring records are manually reviewed (for chart recorders or data loggers) or automatically detected (for telemetry stations) to record instances of low pressure. Constant pressures are assumed within the area around the recorder and no allowance is made for pressure losses due to flow. This can create some inaccuracies in defining the number of properties affected, but is considered reasonable.

Uncertainties can occur in the detection of instances of low pressure (for example, if chart recorders or data loggers are faulty, the charts are not changed appropriately at chart recorder sites, or in the manual review of chart records and data loggers) which can result in some instances not being recorded. Data provided by Sydney Water indicated that data capture for some of the mechanical chart recorders was as low as 50%, whereas it is above 95% for data loggers. This process will improve in accuracy as the IICATS project is implemented, due to the replacement of unreliable equipment and the automated detection of low-pressure instances.

As with the continuity standard, the number of properties affected by low pressure is determined using the WAMS system, but with an additional step using 1-metre contours to define polygons that are then used to count properties affected. Recording of properties affected is thus subject to some estimation, based on defining the polygon from pressure records. The process also has the same potential for errors as the continuity standard, i.e. the potential to either nominally overcount or undercount the number of properties affected. In total, these errors are not expected to have a significant effect on the recorded number of properties affected, however this is unable to be verified. Checking of a sample of Job Cards by the auditor detected no errors/errors and/or inconsistencies between Job Cards and WAMS records.

Collating and Reporting of Data

Calculation of reported performance standards from monthly data was found to be correct.

Strategies, Plans and Programs to Ensure Compliance

Sydney Water is implementing the IICATS project for monitoring of water pressure, various operational and maintenance projects to rectify one-off instances, and specific capital programs. Sydney Water manages the process via utilisation of its "Summary of Outcomes" process. The major project for Improvement of Water Mains Pressure was approved by the Sydney Water Board in August 2001, which allocates \$8M in capital works over 5 years to deliver improved services to 3070 properties with recurrent or continuous problems (including 1291 in designated low water pressure areas (DLWPAs)). This indicates that Sydney Water has adequately provided to improve its level of service for drinking water pressure.

Summary

Overall, Sydney Water has reported that it has readily achieved the required standard for drinking water pressure, and the audit finds that the measurement and reporting of the standard is accurate and reliable, with a reasonably high degree of confidence at the time of the audit. Adequate systems appear to be in place to ensure that the standard is maintained and amended standards for 2001/2002 are met. Sydney Water fully complies with this standard.

Some inaccuracies occur with missed instances of low pressure through faulty equipment or human error, which will be addressed by the IICATS project, although the extent of these could not be verified. Confidence in reported performance could be improved by the provision of evidence of full conduct of planned internal audits, records of staff training, the connectivity of asset to property in HYDRA, and data quality review of MAXIMO. Even so, the cumulative errors in the systems are not expected to be large, and not sufficient to cause non-compliance.

7.4.1.4 Sewage Overflows

Interpretation

Sydney Water's interpretation of the definition of an overflow, properties affected, and the compliance formula, are considered reasonable.

Measuring and Recording of Data

Overflows are normally identified from customer calls to report an observed overflow or an odour problem, which initiates a service response from Sydney Water. The recording of data is via the Job Card system and the same comments apply to sewer overflows as for drinking water continuity above, relating to the Job Card system and WAMS. Checking of Job Cards by the auditor detected no errors/errors and/or inconsistencies between Job Cards and WAMS records. However it was noted that the recording of properties affected on the Job Cards was not always in accordance with the documented procedures, necessitating some interpretation by the personnel entering the data into WAMS. These instances are not considered to have a serious impact on the integrity of the data.

There are some difficulties in ensuring all overflows are identified in wet weather. Sydney Water has acknowledged this in its "Sydney Water Towards Sustainability 2001" report, relating to overall system overflows. Nevertheless, if overflows are detectable by customers, they are likely to be reported as service requests, or arise as complaints. If a customer calls with a second request to attend an overflow, the response is given a Priority 6 with a response time of 1 hour.

Collating and Reporting of Data

Calculation of reported performance standards from monthly data was found to be correct.

Strategies, Plans and Programs to Ensure Compliance

There was an increase in the numbers of both dry and wet weather overflows from the previous year. Sydney Water has given a significant focus to the overflow problem, with performance being regulated by both IPART and the EPA. The systems in place to monitor overflows and programs to upgrade the sewerage system are:

- Monitoring of sewage pump stations (SPSs). All sewage pumping stations are monitored.
- SPS Overflow Risk Reduction Program. This is a \$200 million, 5-year program covering about 300 SPS to reduce the risk of dry weather overflows. The program is under way, commencing in 2000, with a major contract under tender at the time of the audit.
- SewerFix, the umbrella program for upgrading the sewer network which includes the previous Overflow Abatement Program (OAP). The OAP had invested some \$112 million over the past 5 years on sewer pipe repairs and maintenance, including relining of some 350 km of pipe. The principal aim of this work was to reduce stormwater infiltration and hence reduce overflows. A total of some \$2.0 billion expenditure is proposed for the SewerFix program over a 20 year period.

Summary

Overall, Sydney Water has reported that it has readily achieved the required standard for sewage overflows, and the audit finds that the measurement and reporting of the standard is accurate and reliable, with a reasonably high degree of confidence at the time of the audit. Adequate systems appear to be in place to ensure that the standard is maintained and amended standards for 2001/2002 are met. Sydney Water fully complies with this standard.

Confidence could be improved by the provision of evidence of full conduct of planned internal audits and records of staff training, and the implementation of validation checks (such as completeness of jobs) and the improvement of recording of properties affected in the Job Cards. Even so, the cumulative errors in the systems are not expected to be large, and not sufficient to cause non-compliance.

7.4.1.5 Low Pressure Areas

Interpretation

Sydney Water's interpretation of the definition of this standard is similar to that of the water supply pressure standard, except that the standard of service in Designated Low Water Pressure Areas (DLWPAs) was to be developed by Sydney Water within 1 month of the Commencement Date of the Licence. The Commencement Date is defined as 12 April 2000. The standards were proposed by Sydney Water and approved by the Licence Regulator on 31 March 2000. The standards for each of the DLWPAs and the details of reported compliance are set out in **Table 7.4**. The required level of service is 90% of properties unaffected by an incident, in each separate area.

Overall, 95.10% of all properties in DLWPAs were unaffected by water pressure below the standard, but 90% compliance was not achieved for two of the eight DLWPAs: Bayview and Llandilo.

Measuring and Recording of Data

The same process applies as for the drinking water pressure standard. Because of the focus on these low pressure areas, Sydney Water advised that accurate monitoring is maintained with permanent pressure recording stations in each of the DLWPAs.

Collation and Reporting of Data

Sydney Water estimates the number of properties in DLWPAs at 2,818. This number is also considered to be static as no further development is apparently permitted in these areas.

Calculation of reported performance standards from monthly data was found to be correct.

Table 7.4: Designated Low Water Pressure Area's Compliance with Pressure Standard

Area	Pressure Standard (metres head)	Total No. of Properties	No. Properties Affected	% Compliance
Bayview	15	15	15	0
Castlereagh	15	649	0	100
Blue Mountains (Urban and Non-urban)	6	294	9	96.94
Riverstone (incl. Oakville, Schofields)	10	781	0	100
West Camden	10	498	8	98.39
Llandilo (incl. Berkshire Park)	8	460	106	76.96
Nth Richmond	6	121	0	100
TOTALS		2818	138	95.10*

Notes: # Affected at least once.
* Average across all DLWPAs.

Strategies, Plans and Programs to Ensure Compliance

The same process applies as for the drinking water pressure standard, and DLWPAs are included in plans and programs for water pressure improvement works. Some of the DLWPAs were able to be connected into adjacent zones and have readily met the approved standard. The major package for Improvement of Water Mains Pressure includes projects covering 1291 properties in DLWPAs, at a cost of some \$8 million, and approved in August 2001.

All properties, including those in DLWPAs, are treated identically with respect to redress when there is a pressure problem. Sydney Water thus measures redress against the 15 metre pressure standard, even in DLWPAs with lower standards, in order to ensure equitable treatment of all customers. Sydney Water has also appeared to focus on those areas with chronic poor pressure problems, both currently and in the past, and has reduced the number of properties affected by recurrent pressure problems by some 5000 over the past 5 years.

Summary

Sydney Water fully complies with the requirement under Clause 7.2.1 of the Licence, to develop standards for low-pressure areas within 1 month of the Commencement Date of 12 April 2000. Sydney Water received approval to the standards on 31 March 2000.

Sydney Water has a high compliance with Clause 7.2.2 to comply with standards developed for low-pressure areas. Sydney Water achieved the 90% compliance requirement in all but two of the DLWPAs (Bayview and Llandilo), and achieved an average compliance across all DLWPAs of 95.10%. A separate compliance grading for each DLWPA is not considered warranted due to the small number of properties in some areas.

The audit finds that the measurement and reporting of the standard is reasonably accurate and reliable. Some inaccuracies are expected to have occurred in recording and reporting of the standard, particularly during the initial 6 months of the reporting period. This is due to the identified need for improvements to documentation, staff training, and provision of accurate monitoring stations in all DLWPAs, although the extent of inaccuracies could not be verified.

Confidence in reported performance could be improved by the provision of evidence of full conduct of planned internal audits, records of staff training, the connectivity of asset to property in HYDRA, and data quality review of MAXIMO. Individual failures to detect incidents of low pressure could have a significant effect, in some DLWPAs, on the reported compliance due to the small number of properties involved, although this is not considered to be material. Adequate systems appear to be in place to ensure that the standard is maintained and amended standards for 2001/2002 are met.

7.4.1.6 Other Standards Determined by the Minister

The auditors were advised that there were no other performance standards applicable to the period from 1 January 2000 to 30 June 2001. In addition to the reporting of compliance against the performance standards, the Minister requested in 1996 that Sydney Water also count multiple occurrences of discontinuity of water supply or sewage surcharges (overflows) by the same customer. In addition, in 1996 the Minister agreed to a modified definition for low water pressure, so that the standard *“is a guarantee of minimum systems capability rather than short term fluctuations so that customers do not experience low pressure over significant periods of time (months or years).”* Sydney Water has included this definition in its procedures, and interprets this to exclude low water pressure arising from operational problems that are rectified in less than 7 days.

Sydney Water reports in accordance with these modifications and hence fully complies. It is noted that the Compliance Reports to both the Minister and IPART do not explicitly state that the reported compliance for drinking water pressure does not include low water pressure arising from operational problems that are rectified in less than 7 days.

A review of performance standards was undertaken by IPART during the reporting period, with a report including recommendations forwarded to the Minister on 11 April 2001. This resulted in a letter from the Minister to Sydney Water on 22 August 2001 on requirements for amended standards. The amended standards were gazetted on 24 August and became effective from 1 July 2001 and hence do not affect the audited reporting period.

7.4.2 Ministerial Directive – Reducing Unsewered Properties

After the 1999 Operational Audit, the Minister directed Sydney Water:

“...To ensure that I remain fully apprised of Sydney Water’s progress in reducing the number of unsewered properties, with due consideration to community requirements, environment and public health requirements, I look forward to regular progress reports on this matter.”

Sydney Water fully complies with the requirement to ensure the Minister is fully apprised of progress. Sydney Water provides a Compliance Report to the Minister every six months on the Provision of Sewerage Services to Backlog Areas. Reports have been presented for each of the six-month periods to 30 June 2000, 31 December 2000 and 30 June 2001. The reports contain a detailed description of the current status of actions to progress the provision of sewerage in areas where schemes are underway, in the areas identified for the Priority Sewerage Program and the extension of the Priority Sewerage Program.

Sydney Water has a high compliance with the requirement to achieve progress in the reduction of the number of unsewered properties.

The status of actions for the provision of sewerage at the end of the audit period is:

Table 7.5: Status of Areas on Priority Sewage Program as of 30 June 2001

Area	Status at the End of the Audit Period
Picton, Tahmoor, Thirlmere	Construction completed Dec 1999. Approx. 1800 lots connected.
Bundeena, Maianbar	Construction proceeding, due for completion late 2001.
Gerringong, Gerroa	Negotiation of a design, build, operate contract approved May 2001. Completion of construction planned for mid to late 2002.
Blue Mountains	Stage 1: Construction proceeding, due for completion late 2001. Stage 2: Construction planned to commence early 2002, for completion in 2007.
Bungan Beach	Completed 1999.
Menangle, Menangle Park	EIA process underway.
Mulgoa, Wallacia, Silverdale	EIA process near complete.
The Oaks, Oakdale, Belimbla Park	EIA process near complete. Construction scheduled to commence in late 2001.
Brooklyn/Dangar Island	EIA process underway. Further investigations needed.
Stanwell Park/Stanwell Tops/Coalcliff/Otford	Construction scheduled to commence 2002.
Mt Ku-ring-gai Industrial Area	Technical options for servicing this area are being investigated.
Jamberoo	EIA process underway.

Progress is being made towards the target of provision of sewerage to these areas by 2004 in accordance with the Environmental Plan. However, progress has fallen behind the schedule set out in 1999.

Sydney Water fully complies with the Minister's requirement to give due consideration to community requirements. Extensive community consultation on the proposed sewerage schemes is carried out as part of the environmental impact assessment process required for each scheme. Community requirements are communicated through these processes and are given consideration before approval is granted to carry out the proposal.

Sydney Water has also carried out community consultation and information programs in addition to the requirements of the environmental impact assessment processes. For the Bundeena Maianbar scheme for example, Sydney Water has published a number of newsletters and notices, and held meetings with the local community and stakeholders. Customer satisfaction surveys have also been instigated.

Sydney Water is also conducting a study to examine ways to assist customers to connect to new sewerage schemes when they become available.

Sydney Water fully complies with the Minister's requirement to give due consideration to environment and public health requirements. The environmental impact assessment process carried out for each proposal includes an extensive assessment of environment and public health requirements. The schemes adopted by Sydney Water have been based on proven methods for wastewater management, which give due consideration to performance of these objectives.

7.4.3 Ministerial Directive – Strategic Framework of Asset Management

Interpretation

After the 1999 Operational Audit, the Minister directed Sydney Water:

“I require a report on Sydney Water’s strategic framework of asset management. This report is to cover the main components of Sydney Water’s asset planning and decision making process, taking into account reviews of system performance standards. The report will also address deployment of this strategy throughout Sydney Water’s operations, maintenance and asset creation plans.

Progressive development and deployment of detailed asset plans within the strategy is to be undertaken over the following two years from the receipt of the report. I require this report by 31 December 2000.”

Report Coverage

The report is termed “Sydney Water. Strategic Framework for Asset Management.” and is referred to here as the “Strategy”. The Strategy outlines an asset planning and decision making process that is consistent with generally accepted risk management principles, viz:

- Define customer and community needs;
- Assess existing capability;
- Analyse gaps;
- Assess business risk;
- Identify and evaluate options (for sustainable products and services);
- Develop preferred options, including asset creation/renewal, operational changes and maintenance changes; and
- Monitor performance, with feedback loop to start of process.

This process is being used as the template for the development of Product Systemic Plans (although it does not list the Product Systemic Plans proposed), which in turn will be underpinned by more detailed system, facility or asset plans. Draft strategies exist under WaterPlan 21 (for protection of environment and public health relating to the wastewater system), and for water, stormwater, demand management, water recycling and backlog sewerage.

Sydney Water advises that the latest Minister’s requirement is to incorporate the new standards into the Strategy by 1 January 2002. A generic reference to System Performance Standards and reference to the review process may adequately serve the document. Cross-references should be made to other key documents forming part of the Strategy. It would also be of benefit to provide for regular reviews and updating of the Strategy, to give effect to a continuous improvement approach.

Importantly, the Strategy outlines conceivable options that include both capital (new assets, renewals or disposal) and non-capital (commercial, procedural, operational/maintenance and demand management) solutions. Sydney Water has an economic and financial model that considers life cycle costs as part of the evaluation process, and facilitates comparison between options. It is not clear how non-financial criteria or risk are accounted for in this process, but this is beyond the scope of this audit to determine.

The Strategy identifies that Sydney Water has room for improvement in some critical areas and need better integration of key processes, including a proposal to, over the next two years:

- Roll-out a revised planning process to improve integration of strategic and detailed planning,
- Improve the prioritisation of capital works projects, and

- Develop and deploy integrated quality systems for the water and wastewater product streams.

In summary, the Strategy covers the main components of Sydney Water's asset planning and decision making process, and provides for reviews of performance standards by implication. Cross-references to other key documents would be beneficial. The report is perceived to focus on what exists within Sydney Water, and does not clearly identify improvement requirements in the key business areas of Sydney Water, or provide adequately for implementation of improvements or deployment of the strategy through operations, maintenance and asset creation plans. The Strategy would benefit from inclusion of a review process, and a formalised reporting process to the Board to demonstrate a full commitment to meeting the timeframe for deployment. Sydney Water is assessed as achieving high compliance with the requirements for report coverage.

Progressive Development and Deployment of Detailed Asset Plans

Reports were provided to the auditors, including:

- Status Report on Development and Deployment of Strategic Approach to Asset Management, as at 4 October 2001 and apparently prepared specifically in response to audit questions.
- Additional Improvement Projects Identified in Report to Minister, undated and apparently prepared specifically in response to audit questions.

These reports and the Board paper referred to above, indicate the level of progress with key tasks. In addition, evidence was provided of project progress on the WaterPlan 21 project and a program for completion of Facility Plans for water filtration plants and sewage treatment plants. No progress report to the Minister has been provided, nor has any been requested.

With respect to the key areas for improvement identified in the Strategy, the following timeframes have been established:

- Rollout a revised planning process and develop and deploy detailed asset plans by End 2002.
- Improve the prioritisation of capital works projects by Late 2001 to Early 2002.
- Develop and deploy integrated quality systems for the water and wastewater product streams by End 2002.

The documents provided indicate that substantial progress is being made in a range of tasks, although it was not demonstrated how Sydney Water manages this process internally as the status report was prepared specifically for the audit. Many of the completion dates are specified no more clearly than "late 2002". No detailed program for Strategy deployment apparently exists. It would assist in providing confidence in Sydney Water's progress with deployment, if such a program existed and which also linked the various Systemic Product Plans with the major strategies and plans.

Report Submission

The report "Sydney Water. Strategic Framework for Asset Management." was submitted under cover of a Memorandum from the Managing Director to the Minister dated 22 December 2000. Sydney Water fully complies with the requirement to submit the report by 31 December 2000.

7.5 FACTORS AFFECTING COMPLIANCE

There were no major factors affecting compliance for the service standards. Minor uncertainties relating to the accuracy of data for reporting of service standards are discussed in the relevant parts of Section 7.4.

7.6 RECOMMENDATIONS

7.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R7.1 Develop and seek IPART's agreement to a definition of "*properties connected*" to either the water or sewerage system, under Schedule 4 of the Licence.

(Note: Sydney Water includes unconnected vacant land and sundry services such as standpipes (which are connected but not necessarily to a property) in the number of properties used for reporting compliance with System Performance Standards. The inclusion of these categories of services in the number of "properties connected" is not considered to meet a reasonable interpretation of the term).

- R7.2 Clarify, in the Review of System Performance Standards, the term "*Connected properties currently unoccupied shall be included*" for both Water Continuity and Pressure standards, and "*Private property currently unoccupied shall be included*" for the Sewage Overflows standard.

(Note: The first definition implies that unconnected vacant land is excluded while the second implies only private land is included).

- R7.3 Review its asset management and performance standards to ensure that asset performance is being, and can be, maintained in a sustainable manner. Such systems include:

- appropriate asset management framework, plans and programs;
- adequate asset and historical performance information;
- adequate predictive capability for long term asset performance and impact on service levels;
- risk management and decision-making processes which take into account social, environmental and economic criteria;
- options identification which provides for a range of appropriate treatments to meet a need, that is, including non-capital options; and
- lifecycle cost assessment.

(Note: A number of these aspects are considered to be relevant to a specific asset management component to a future audit. Some of them have been the subject of previous assessments (for example, Office of the Water Regulator, UK (OfWat) assessment of asset information) and may not need to be assessed in detail.)

7.6.2 Secondary Recommendations

There are no secondary recommendations.

8. WATER CONSERVATION & DEMAND MANAGEMENT

8.1 SUMMARY OF FINDINGS

Sydney Water obtained 'Low to partial compliance' with respect to the actions taken to reduce the quantity of water it draws from all sources (other than Re-use water) as shown in **Table 8.2**. Sydney Water has been active in this area however, the actions are projected to be insufficient to meet the 2004/05 or 2010/11 water conservation targets. The current program predicts that water consumption in 2004/05 will be in the vicinity of 386 litres per capita per day (22 litres per capita per day in excess of the target). Sydney Water acknowledges in its Water Conservation and Recycling Implementation report (August 2001) that *"Reaching the per capita reduction targets (2004/05, 2010/11) will require either expansion of existing programs or the addition of new options"*.

Overall, Sydney Water obtained 'High compliance' for developing the demand management strategy and reporting on implementation. For improved accountability and reporting of performance in future audits, documentation of an annual timetable with key decision milestones and a statement of actual program expenditure versus original budgets is suggested in the report required under Clause 8.2.3.

As the most recent demand management program commenced in 1999, the focus of Sydney Water has been on rolling out the program. The program has been designed to meet the requirements of the Operating Licence and budgets have been allocated to achieve this. However, because of the long time scale needed to implement the programs, and achieve sufficient data for analysis, particularly for retrofit programs, a clear picture of the extent of water savings is difficult to predict at this early stage.

A clearer comparison of demand management initiatives against all criteria Sydney Water uses to define the priority of implementation of its water conservation programs is needed. Also, while the Least Cost methodology has been independently reviewed, the methodology for prioritising the overall strategy has not been so reviewed. Hence, a 'Partial compliance' was achieved against clause 8.2.4 (g). A similar compliance was obtained for clause 8.2.4 (d) in that additional water conservation measures have been identified but have not yet been costed or evaluated.

Further, a technical 'Non compliance' was obtained for clause 8.2.4(f) as the report did not compare the demand management plans with alternative water supply options, although Sydney Water had addressed this issue in previous reports.

Sydney Water has taken actions to re-use, intercept or otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of Customers and Consumers by way of non-potable re-use. 'Partial compliance' was awarded for this requirement, as the actions were not sufficient to meet the 1995-2000 target.

Sydney Water has developed a strategy and undertaken significant actions to implement the National Water Conservation Rating and Labelling Scheme, however it is progressing slower than expected hence 'High compliance' was obtained. The auditor acknowledges that this is a scheme that requires significant negotiation and agreements with other water authorities and manufacturers of domestic appliances in Australia.

8.2 SUMMARY OF REQUIREMENTS

Section 8 of the Operating Licence requires Sydney Water to comply with specific water conservation and demand management objectives. This is to ensure that Sydney Water achieves appropriate water reduction targets and implements water re-use or interception strategies to minimise wastewater discharge and to delay or avoid the construction of another water supply dam.

Section 8 specifically addresses the following aspects of water conservation and demand management:

- **Water Conservation Targets**

Sydney Water must act to reduce water consumption to specified conservation target levels for the next 10 years. Assessment of compliance with these targets must consider effects of weather on water usage and annual averages. Progress in meeting these targets must be reported annually.

- **Demand Management Strategy**

Sydney Water must give priority consideration to demand side management in the provision of services. The Corporation must produce an annual Demand Management Strategy Implementation Report on activities over the last 12 months.

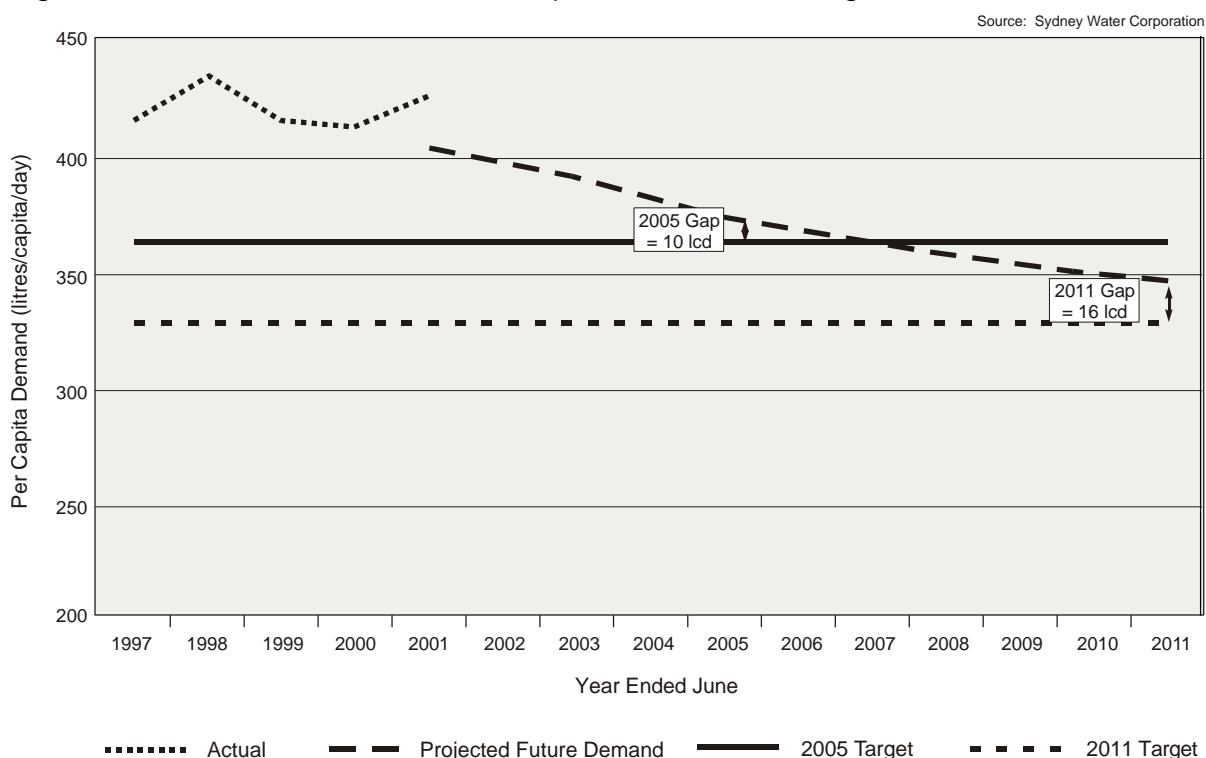
- **Reducing Discharges**

Sydney Water must take action to re-use, intercept or otherwise prevent waste water from discharging to the ocean, waterways and other waters through non-potable reuse.

- **Water Conservation Rating and Labelling**

Sydney Water must encourage manufacturers of water appliances to improve the water use efficiency of these appliances. Achievements must be reported each year.

Figure 8.1: Actual and Estimated Per Capita Demand and Targets



8.3 DETAILS OF COMPLIANCE

Table 8.1: Water Conservation & Demand Management – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:		
(e)	Compliance by Sydney Water with the Water conservation targets under clause 8.1.1;	No Requirement	<p>Compliance by Sydney Water with the Water Conservation Targets under clause 8.1.1 cannot be determined as part of this audit, as the targets fall beyond this audit period. It is evident however that the current Sydney Water program, to reduce the quantity of water (other than Re-use water) it draws from all sources, is unlikely to achieve the water conservation target for 2004/05 or 2010/11.</p> <p>Figure 8.1 graphically presents Sydney Water's previous annual per capita demand and compares it with demand management projections. This graph also shows the target per capita demands for the years 2005 and 2011. A marginal downward trend in actual demand is evident. However, the projections show that the 2004/05 demand management target will not be achieved. Also, actual demand fluctuates significantly due to effects such as climate whereas the demand management projections are for average conditions. Reporting of average per capita consumption compared to the demand management projection would improve the value of this figure.</p>
(f)	Sydney Water's Performance in relation to implementation of the demand management strategy under clause 8.2;	No Requirement	<p><i>There is no Compliance requirement against this clause as this clause requires an assessment of 'performance' rather than 'compliance'.</i></p> <p>As the current demand management program commenced in 1999 and a long time scale is needed to implement and achieve sufficient data for analysis, a clear picture of the extent of the ultimate overall water savings is difficult to predict at this early stage in program implementation.</p> <p>It is noted, however, that the program has been designed to meet the requirements of the Operating Licence and budgets have been allocated accordingly.</p> <p>For improved accountability and reporting of performance in future audits, documentation of an annual timetable with key decision milestones and a statement of actual program expenditure versus original budgets is suggested in the report required under Clause 8.2.3. This is considered important as the strategy commitment does not mean the total budgeted funds will be spent or alternatively may mean more funds are required than forecast in original budgets.</p>

Table 8.1: Water Conservation & Demand Management – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
(g)	Progress by Sydney Water in meeting the re-use targets required under clause 8.3.1;	Non Compliance (to year 2000 reuse target)	<p>Sydney Water did not meet the 1995-2000 target for non-potable reuse. Only 28.4 ML/d is currently recycled against a year 2000 target of 58 ML/d. A key issue has been problems with customer acceptance according to Sydney Water.</p> <p>The Minister has not set a recycled water target since 2000. Sydney Water has developed additional recycling “projections” for the period 2000 to 2005 ranging between 4 to 67 ML/d. Sydney Water has not set specific market sector targets for non-potable reuse but has defined ‘highly probable’, ‘probable’ and ‘possible’ projections.</p>
(h)	Progress by Sydney Water in relation to the implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1.	High Compliance	<p>Sydney Water has demonstrated a commitment to the National Water Conservation Rating and Labelling Scheme. However, the implementation of regulatory standards associated with this scheme is progressing significantly slower than expected.</p> <p>Please refer to audit findings for Clause 8.4.1, Table 8.2.</p>

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
8.1	Water Conservation Target		
8.1.1	Sydney Water must take action to reduce the quantity of water (other than Re-use water) it draws from all sources to the following target levels ("water conservation targets"):	Low compliance	A 'Low compliance' rating has been awarded as although Sydney Water has taken actions to reduce the quantity of water (other than re-use water) it draws from all sources, it will not meet the 2004/5 per capita reduction target with its existing water conservation programs.
(a)	364 litres per capita per day by 2004/5 (being a reduction of 142 litres per capita per day or 28% from the 1990/1991 baseline)		Sydney Water acknowledges in its Water Conservation and Recycling Implementation report (August 2001) that <i>"Reaching the per capita reduction targets (2004/05, 2010/11) will require either expansion of existing programs or the addition of new options"</i> . The current program predicts that the target of water consumption for 2004/05 will be in the vicinity of 386 litres per capita per day (22 litres per capita per day in excess of the target).
(b)	329 litres per capita per day by 2010/2011 (being a reduction of 177 litres per capita per day or 35% from the 1990/1991 baseline)		The primary reasons given by Sydney Water for this projected non-compliance include:
(c)	Such target level for 2014/2015 as determined as part of the Mid term review of this Licence conducted under clause 2.3.1		<ul style="list-style-type: none"> Changes by DUAP in 2000 to a lower population estimate for the Sydney region resulting in a higher per capita starting point. However, there is only a small effect on per capita demand. Above average temperatures and long dry periods which have increased the base demand in 2000/01 (from August 2000 onwards). A model to remove climate effects is being developed by Sydney Water but is not yet robust enough to use. It is understood that the water conservation targets are for average climate conditions. Dry climate conditions could raise demand by 10 litres/capita/day (lcd). Hence, given the lack of a robust climate correction model and the projected 2000/01 savings of 6lcd, it is difficult to verify whether Sydney Water is on track. Delays in implementation of measures due to the longer than expected timeframes to complete pilot programs and establish resourced teams for the Every Drop Counts (EDC) residential/non-residential and leakage programs. Sydney Water did not provide evidence that confirms the importance of this reason. Savings from EDC program being less than expected. Sydney Water provided evidence that confirms this. The revised target of 6.6lcd is considered a reasonable response based on proposed budget allocated by Sydney Water. Water prices declining in real terms under the current IPART price determination set in 1996. Evidence to verify this was not provided by Sydney Water. However, IPART has advised it

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>approved Sydney Water's pricing proposal in the 1996 determination covering the period 1996 to 2000.</p> <p>Measurement and Achievement of the Water Conservation Targets is discussed in Section 8.4.1.</p>
8.2	Demand Management Strategy		
8.2.1	In this clause: Demand Management Strategy means the 1995 Demand Management Strategy updated from time to time by Sydney Water or as required by the Minister	No requirement	This clause is a definition and does not impose a requirement upon Sydney Water.
8.2.2	Sydney Water must give priority consideration to demand side management as the basis for planning the future provision of its Services, including addressing Unaccounted water losses.	Full compliance	<p>Sydney Water produced a revised Demand Management Strategy, released in December 1999, which covers a strategy commitment to an expenditure of over \$50 million. The strategy included demand side management and addressing unaccounted for water. In the program review of August 2001, the estimated expenditure on these activities for the period 1998/99 to 2004/05 is forecast to be \$40.855M out of a total program value of \$71.355M. Attention to leakage (unaccounted for water) is forecast to cost \$11.4 M over the period to 2004/05.</p> <p>Demand projections are discussed in Section 8.4.2. See also discussion relating to accuracy of Measurement in Section 8.4.3.</p>
8.2.3	By no later than 1 September each year, Sydney Water must provide a report ("the Demand Management Strategy Implementation Report") to the Licence Regulator on implementation of Sydney Water's Demand Management Strategy for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit	Full compliance	A Water Conservation and Recycling Implementation Report which represents Sydney Water's obligation under this clause was delivered on 31 August 2001.
8.2.4	The Demand Management Strategy Implementation Report is to:	See Below	Improvements to the annual business cycle, which end in production of this Report, may be needed to ensure all relevant information for the Report is accurate and collected in a timely manner and correct sign-offs are obtained prior to its release. One of the key issues is the relatively short period between 30 June, when most information is available, and the date when the Report must be submitted to IPART.

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			Sydney Water representatives agree that improved data collection throughout the year would facilitate an improved Demand Management Strategy Implementation Report.
(a)	Contain an estimate of past, current and projected water uses and distinguish between residential, industrial, commercial and government uses	High Compliance	<p>Historical trends in demand for residential, industrial, commercial and government (including institutions) for the period 1981 to 2001 have been provided. Water use for the government category has not been provided as a current and future water use projection, hence a lower than full compliance rating was awarded.</p> <p>It is noted however that:</p> <ul style="list-style-type: none"> the government demand has a pattern similar to large commercial demands and similar demand assumptions are considered to apply; the government category comprises about 5% of metered demand; and some potential savings in the government sector is discussed in the Report.
(b)	Describe the frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage or loss, drought or emergency	Non compliance	<p>Sydney Water did not report on this aspect. Sydney Water sees this as a responsibility of the Sydney Catchment Authority (SCA).</p> <p>This is a significant omission as there is a need for joint responsibility between the SCA and Sydney Water in defining a supply deficiency (e.g. restriction criteria and impacts) and in developing best case and worst-case demand scenarios. Sydney Water has regular liaison meetings with SCA and advises that best case and worst case scenarios have been developed to consider climate variations but do not, as yet, allow for impacts of demand management. Sydney Water did not provide evidence of these scenarios.</p>
(c)	Identify conservation measures currently adopted and being practiced	Full compliance	Conservation measures currently adopted and being practiced are clearly documented.
(d)	<p>Describe, cost and evaluate additional conservation measures</p> <p>(In this context, additional conservation measures are taken to mean new measures not currently implemented or planned).</p>	Partial compliance	<p>Compliance with this clause has been limited to 'Partial compliance' as only a description of possible additional conservation measures has been included in the Report. To date, possible additional conservation measures have not been costed or evaluated in detail by Sydney Water. This is a relatively poor position given the current Sydney Water projection that the per capita demand target for 2004/05 will not be achieved and the finding that implementation of existing</p>

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>demand management activities is proving more difficult and/or less effective than expected.</p> <p>The most significant activity by Sydney Water in this area is in understanding demand drivers. Demand drivers being investigated by Sydney Water include:</p> <ul style="list-style-type: none"> • why growth in water demand by residential units is occurring; and • identification of specific, high demand industrial, tourism and commercial activities as well as residential outdoor water usages which have opportunities for conservation. <p>Sydney Water has flagged that it will consider other measures in coming months but at this stage can give no details.</p>
(e)	Describe future plans for water reclamation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users	Full compliance	These plans are clearly documented in the Report. Of particular importance is the focus by Sydney Water on understanding demand drivers particularly in sectors showing increasing unit consumption trends (e.g. residential units) and where significant potential for savings are possible (e.g. outdoor water use).
(f)	Evaluate these plans in terms of their cost and contrast with the cost of alternative water supplies	Non compliance	<p>This is a technical non-compliance. The Least Cost Planning Study Phase One Report 1998 compared over 40 demand and alternative supply options in the terms required by this Clause however, there was no discussion or contrasting water conservation strategies with alternative water supplies (e.g. rain water tanks) identified in this report.</p> <p>Sydney Water advised that comparison of demand options with alternative supply options was not considered appropriate at the time when the required report was prepared.</p> <p>A review phase is now in progress to complete the first cycle of planning, delivery, evaluate and review the report.</p>
(g)	Prioritise and schedule the implementation of courses of action found to be cost effective	Partial compliance	<p>While Sydney Water has provided a set of criteria for prioritising and scheduling implementation (refer to Section 8.4.1), the details of the scoring process for the actual program now in place to 2004/05 remains unclear hence only a 'Partial compliance' has been awarded.</p> <p>The report covers savings and levelised cost and infers initiatives which have high levelised cost, such as industrial recycling, are included because they can provide timely reductions in demand. However, no well-defined scoring process against each of the demand management criteria is</p>

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>provided.</p> <p>As an internal review process, Sydney Water commissioned the Institute of Sustainable Futures (e.g. Least Cost Planning – Stage 3 report (September 2001) to ensure the basis of the Least Cost Planning methodology in the End of Use Model is correct. However, an independent technical review of the complete demand management strategy outlined in this Report may also be warranted to develop various demand projection scenarios and consider impacts on related issues such as restriction policies and monthly demand patterns.</p>
(h)	Identify strategies for reducing Unaccounted water losses	Full compliance	Strategies for reducing unaccounted water losses are clearly documented but essentially cover only leakage reduction.
8.2.5	Sydney Water must engage a suitably qualified third party to verify the accuracy and soundness of its mathematical models for water usage and report the results to the Licence Regulator within 1 month after the commencement date.	Full compliance	<p>The third party audit has been completed (by Deni Green and Associates) and was provided to IPART in March 2000 as formally required.</p> <p>The findings of the third party audit were that the Model “is soundly based and should provide Sydney Water with reliable projections for future demand. The model relies on the best data sources available”.</p> <p>See Section 8.4.5 for further discussion.</p>
8.3	Reducing Discharges		
8.3.1	Sydney Water must take action to re-use, intercept or otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of Customers and Consumers by way of non-potable re-use. Sydney Water is to meet the targets set by the Minister from time to time.	Partial compliance	<p>Sydney Water has taken actions to re-use, intercept or otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of Customers and Consumers by way of non-potable re-use. However, the actions were not sufficient to meet the 1995-2000 target, hence only ‘Partial compliance’ was awarded.</p> <p>Actions on non-potable reuse by Sydney Water are summarised in the Water Conservation and Recycling Implementation report (August 2001).</p> <p>Incentives used by Sydney Water to encourage reuse include:</p> <ul style="list-style-type: none"> assistance with obtaining low interest rate loans for industry to fund sewer recycling infrastructure;

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> EPA based pollutant load fee reductions for reuse schemes; and Encouragement of the concept of sewer mining (processing of sewage for commercially valuable products). <p>Sydney Water has in place a strategy which focuses on:</p> <ul style="list-style-type: none"> Reducing discharges at environmentally sensitive locations; Encouraging non potable use by industry and in irrigation schemes; Establishing commercial agreements; and Sewer remediation to reduce infiltration. <p>Issues relating to the accuracy of measurement for non-potable reuse are discussed in Section 8.4.3.</p>
8.4	Water Conservation Rating and Labelling		
8.4.1	Sydney Water, through continuing support for the National Water Conservation Rating and Labelling Scheme, is to encourage manufacturers of water appliances to improve the water use efficiency of these appliances where consistent with Sydney Water's objectives	High compliance	<p>The implementation of the National Water Conservation Rating and Labelling Scheme is progressing significantly slower than expected. Sydney Water judges success by the number of manufacturers and products covered under the scheme. This is a suitable performance measure and is verified by the independent scheme manager in Water Services Association of Australia (WSAA).</p> <p>Sydney Water has, in response, developed a strategy, which over time, should result in manufacturers adopting the scheme. In broad terms, the strategy consists of:</p> <ul style="list-style-type: none"> Initially undertake education and product promotion campaigns covering both water and energy efficiency benefits; implement discounted retrofit of equipment which are known to be good products and deliver benefits while maintaining an adequate standard of service; and, at a later stage,

Table 8.2: Water Conservation & Demand Management - Part 8 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> when community perception and demand for these products improves implement regulatory standards. <p>Recent significant action in the rating area is Sydney Water's participation in the major review and revamp of "Miscellaneous Publication 64 – 2001 Interim Manual of assessment procedures for water efficient products (May 2001)".</p> <p>Sydney Water's commitment to the scheme is also indicated by the fact that they are a major funding body for WSAA.</p> <p>Finally, Sydney Water representatives sit on the national committee developing the rating and labelling scheme towards mandatory standards.</p> <p>See further discussion on mandatory standards in Section 8.4.5.</p>

8.4 DISCUSSION

8.4.1 Criteria used for Prioritising Water Conservation Targets

Sydney Water is considering further water conservation measures using a least cost planning methodology and End Use Modelling. Conservation measures are screened to identify those that deliver significant demand reductions at low overall cost. The output of this model influences the decision to place an initiative on the Implementation Schedule.

Other factors used to choose conservation measures include:

- ability to provide reductions in a short time frame;
- certainty about costs and benefits;
- balance of conservation measures both in terms of type (e.g. education, retrofitting) and sector (e.g. residential, industrial); and
- equity considerations.

Type, sector and equity are only second order considerations for Sydney Water as they can limit targeting of effective demand reduction initiatives. It also appears that Sydney Water is focussing on averages in its evaluation of conservation measures. However, in the roll out of the Every Drop Counts (EDC) Residential (indoor) retrofit and to a lesser extent the EDC Residential Outdoor programs, discussion in 1999 was given to targeting the most suitable Local Government Areas (LGAs). Preference was to be given to:

- high water supply and wastewater collection areas;
- high water usage per household areas;
- low median income areas;
- achieving an uptake rate of 1 in 10; and
- minimising plumber travel distances in line with least cost objectives and therefore preferring LGAs which are next to each other.

The extent to which these principles have been applied in the subsequent roll out has not been discussed in Sydney Water's Annual Report.

For Business customers, Sydney Water has been able to increase the level of breakdown of businesses to specify address and type of business. This has shown, for example, that food and beverage businesses account for about 30% of the total manufacturing sector's water use. There has however, been difficulty in getting industry to implement improvements due to up-front costs. Sydney Water is developing a commercial funding arrangement to assist implementation but the arrangements have not yet been approved. A recent more detailed analysis also indicates significant changes in the segments that have a high demand for water compared to the segmentation pie chart published in the 2001 Report to the Licence Regulator. For example, the percent of total business customer demand attributed to the Retail and Wholesale Trade Sector has changed from 17% down to 6%. This compares with the Cultural, Recreational and Education sector that has increased from 9% to 17%.

Finally, Sydney Water may consider in upcoming years broad-spectrum media campaigns to obtain changes in community attitude to water conservation. However, media campaigns have a relatively high cost with a high level of uncertainty regarding sustained water use reduction over time. Sydney Water has also gained some exposure indirectly through the NSW Government *"It's a Living Thing"* TV advertising which specifically mentions the 'Every Drop Counts' term in conservation advertisements.

8.4.2 Demand Projections and Options for Demand Management

The water demand projections from Sydney Water are provided to SCA as “average” annual demands and best case and worst case projections based primarily on weather variations. Also, Sydney Water and SCA have a joint planning committee to review the forecasts for the Bulk Water Supply Agreement. However, there appear to be “grey” areas of unclear or shared responsibility in terms of assessing the impact on timing of the next supply augmentation. The issues include:

- alternative 'non drought triggered' restrictions as a demand management initiative which may change the reduction in demand achieved following implementation of restrictions during real drought events;
- changes in the mix of residential indoor/outdoor, industrial, commercial and unaccounted for water in demand projections due to demand management activities; and
- uncertainty in demand projections due to 'one off events' (e.g bushfire response and Olympics) and accuracy of measurement.

Sydney Water's Demand Management Strategy does not include reduction in the uncertainties in leakage estimates by, for example, installing meters on currently unmetered customers as recommended by the International Water Association (IWA) or a separate program for detection and shut down of illegal connections. Sydney Water does not consider the benefits of installing these meters outweigh the customer impacts and believes knowledge about illegal connections will improve as the leak detection program moves across the reservoir zones.

Pricing strategies focused on stepped pricing at high consumption levels to potentially minimise water waste, are currently being investigated by Sydney Water but is not specifically identified in their most recently published strategy (August 2001) covering the period to 2004/05.

Finally, it is unclear what criteria Sydney Water uses to decide when a particular demand management initiative should be shut down because it is not working.

8.4.3 Accuracy of Measurement – Demand Side Management

An important aspect of determining whether actions by Sydney Water are helping to achieve the target is the accuracy of measurements.

Sydney Water carries out regular calibration and internal audits of Bulk Water Supply Meters for the major water treatment plants as part of ensuring correct payments by Sydney Water to plant operators. However, for the approximately 7% of demand from small water treatment plants operated by Sydney Water, flow meters are only now being calibrated.

The active leakage reduction program is a major cost and source of demand management. Accurate calculation of Minimum Night flows (MNF) is essential for accurate estimation of fixable leaks. Sydney Water is in the process of verifying flow meters used in calculating MNF over the next six months, is installing new flow meters where appropriate and undertaking trend analysis to help validate MNF results. Review of the Penshurst Reservoir zone leak detection report (September 2001) also highlights the importance of accurate estimation of the assigned flow value for each detected leak. Details that validate the values assigned in the Sydney Water system were not however included with this report. Finally, statistical validation of the extent of change in MNF following leak repairs has yet to be considered by Sydney Water.

Sydney Water has established appropriate criteria for accurately judging the impact of some initiatives. Statistical evaluation of the smart shower; Shellharbour Pilot refit; Mount Victoria water efficiency and Every Drop counts Residential Retrofit Programs has been completed with 95% confidence intervals for savings estimates. The savings range from 16.5 ± 6.6 kL/property to 20.1 ± 3.7 kL/property. However, several issues associated with certainty or accuracy of measurement appear to remain unresolved or lack discussion:

- what is the best way to consider the statistical variability in the impact of water conservation measures on overall per capita demand projections for Sydney; and
- the means by which underlying “average conditions” per capita demand is established. For example, how should the impact of climate be removed from Sydney Water total demand projections provided to SCA. This is important to demonstrate the degree of compliance of actual “climate adjusted” per capita demand against demand management projections. Currently, the annual report (2001) for compliance with Clause 8.2.3 of the licence shows actual unadjusted annual per capita demand compared to “climate and event adjusted” demand management projections (refer Figures 17 and 18 of this annual report) and hence does not enable comparison of like with like.

8.4.4 Accuracy of Measurement - Non-Potable Reuse

The accuracy of measurement of non-potable reuse may require some improvements as about 88% of non-potable reuse to date occur within STPs where many applications do not have meters. Sydney Water needs to provide an assessment of the accuracy and variability of their estimates. All off-site reuse is metered and a process exists for collation of this information. Meter calibration procedures, however need to be verified for accuracy.

Audits of reuse schemes are completed under the ISO14001 EMS for each STP but no evidence that these audits include checking of reuse water volume measuring systems has been provided by Sydney Water to the Auditor.

8.4.5 Third Party Audit of Models for Water Usage

The audit focused on the model assumptions (e.g. that elasticity of demand = 0.15) but did not consider how the model provides input into the assessment of overall demand management analysis e.g. “best case”, “worst case” or “adopted planning” scenarios for overall per capita demand projections.

The audit did not appear to cover issues such as climate corrections or alternative modelling approaches.

Finally, subsequent to the audit the model has been reviewed and updated to incorporate new data (e.g. results of EDC – residential) and new concepts (e.g. tourist demand).

It is concluded that a wider scope for future third party technical audits is warranted. A follow up third party audit is recommended for 2002.

8.4.6 Mandatory Standards

In its December 1999 Implementation program, Sydney Water forecast introduction of mandatory standards for showerheads by 2002/03 and for washing machines the forecast was 2003/04. The revised target for introduction of any standards is now an unspecified date beyond 2005. Substantial barriers to introduction of regulatory standards exist and include:

- Complexity of introduction and resistance by suppliers for a national system of water efficiency labels for all products and for meeting minimum water efficiency requirements for these products;
- customer resistance to front loader washing machines; and
- lack of economic gain by customers installing water efficient products due to relatively low cost of water (say compared to electricity).

The barriers in this area have resulted in Sydney Water’s water conservation targets (Clause 8.1.1) for shower head standards delivering 2.6 litres/capita/day by 2004/05 being reset to 0 litres/capita/day by 2004/05.

8.4.7 Conclusions

Sydney Water's current projections regarding water conservation do not achieve compliance with targets (Clause 8.1). Additional conservation measures will be required. Several promising areas have proved more difficult to implement than expected (for example, Mandatory Standards). In addition, the definition of achievement of targets given the statistical and climate related variability associated with the impact of each conservation measure requires further consideration. For example, is it the average per capita demand that must achieve the target or the per capita demand during drought? Similarly, is it the 90% or 95% confidence interval for a particular demand saving which is to be used in calculating the impact of a particular demand management or water conservation measure?

There is also doubt concerning the accuracy of non-potable reuse estimates and calculations used for determining demand reduction from leak repairs. These areas are major sources of projected water savings and require a well-documented process of verification and validation.

A grey area of unclear responsibilities is perceived to exist between Sydney Water and Sydney Catchment Authority regarding demand scenarios and impact of demand management activities on drought restriction policies.

8.5 FACTORS AFFECTING PERFORMANCE

As the current demand management program commenced in 1999, the focus of Sydney Water has been on rolling out the program rather than considering new options.

Most programs such as EDC-Residential indoor and outdoor program, the EDC-Business program, Industrial Water recycling and pricing are not under the control of Sydney Water and are therefore difficult to predict in terms of uptake rates and ability to implement.

Similarly, because of the long time scale needed to implement, and achieve sufficient data for analysis, particularly for retrofit programs, an accurate picture of the extent of ultimate overall savings is difficult to predict at this early stage in program implementation.

The complexity of accurately estimating and monitoring leakage reductions also requires time to develop and identify. For example, where additional flow monitoring points should be is a task that has taken considerable time to define and start to implement.

Finally, there are some uncertainties in validation of performance because of a lack of application of appropriate statistical methods. This is particularly the case with leakage reduction using change in Minimum Night Flows.

8.6 RECOMMENDATIONS

8.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R8.1 Review its existing Water Conservation and Re-Use programs to meet the per capita reduction targets (2004/05, 2010/11), by either expansion of existing programs or the addition of new options. The scoring process against all criteria used by Sydney Water to select new programs and stop poor performing programs should also be made clearer and be independently reviewed.
- R8.2 Improve validation of Impacts of Water Conservation and Reuse measures by defining change in Minimum Night Flows attributed to leakage reduction, using independently audited statistical measures similar to those used to validate impacts of Every Drop Counts (EDC) retrofits. Sydney Water should also provide evidence that validates its estimates of assigned leak rates.
- R8.3 In its comparison of “actual” compared to “projected (after demand management)” annual per capita demands, adjust for (include or remove) the effects of “climate” for both the actual and projected figures and show 95% confidence levels, or similar, to validate progress towards targets for 2005 and 2011.
- R8.4 Establish a separate estimate for projected water use for the Government sector.
- R8.5 Determine, in association with the Sydney Catchment Authority, the impact of demand management activities on supply deficiency analysis (particularly in terms of best and worst case scenarios of the impact of implementing restrictions during a drought and for variation with climate for both annual and monthly demand patterns) and document in the Report.

8.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R8.6 Collate information and documents, in the Demand Management Strategy Implementation Report, actual compared to budgeted expenditure for each water conservation program and include reference to costing and contrasting of demand management activities with alternative water supply options.
- R8.7 Collate information and documents, in the Report, progress in installing EDC indoor and outdoor retrofitting and other water conservation measures in LGAs with the highest likely water savings and related gains for Sydney Water.
- R8.8 Conduct a follow-up third party audit and a technical review for 2002 (refer to Clauses 8.2.4 (g) and 8.2.5) that considers how least cost modelling is used in assessment of overall demand management strategies and could be used in the development of best case, worse case or adopted planning scenarios for overall demand projections.

9. ENVIRONMENT – INDICATORS & PLANS

9.1 SUMMARY OF FINDINGS

Sydney Water obtained 'Full compliance' for monitoring and compiling data on indicators of the direct impact of its activities on the environment. Sydney Water has established detailed methods and manuals to provide assurance of the quality of the data compiled on these indicators. Further, the accuracy of the significant quantity of data that has been compiled has been independently verified.

Sydney Water obtained an overall 'Partial compliance' for other requirements relating to environmental indicators. Sydney Water did not prepare a report that described its performance against all gazetted environmental indicators. It is further noted that numerous environmental indicators were not monitored or compiled, during the audit period, in accord with the recommendations of an internally commissioned review of its monitoring programs. As a consequence, the Auditor was not able to properly report on the performance of Sydney Water in relation to the environmental indicators, especially trends over the last decade.

Sydney Water obtained 'Full compliance' for requirements relating to Environmentally Sustainable Development (ESD) indicators. Sydney Water developed a list of ESD indicators, commenced monitoring and compilation of data against the indicators, and prepared a report outlining performance against each indicator to the Licence Regulator. Sydney Water has adopted an "ecological footprint" approach to assist in measuring its ESD performance in a single measure from year to year. This may be a useful indicator to identify trends. The performance of Sydney Water in relation to the ESD indicators was diverse. Some indicators demonstrated exceptional performance while others indicated areas where performance should be improved.

Sydney Water's compliance in relation to the Environment Plan is difficult to quantify at this stage. The Plan was adopted at the end of September 2000 and includes objectives for the five-year period to 2005. At the end of the audit period, only 8 months of a five-year program had elapsed and many targets are to be met from 2002 onwards. For those targets due in the audit period, Sydney Water obtained 'High compliance', having met most of the targets. In addition, Sydney Water demonstrated 'Full compliance' with the preparation and incorporation of the Environment Plan within its business planning cycle.

Sydney Water obtained technical 'Non compliances' for requirements relating to the timely release of an annual report to the public on its performance against the Environmental Indicators, ESD Indicators and the Environment Plan. Sydney Water was ready to make the report available to the public on the required date, however, the report contained water quality data collected by BeachWatch, that could not be released prior to the release of the BeachWatch data to the Parliament by the Minister for the Environment. Consequently, the report was not released within the timeframe stipulated by the Licence.

Sydney Water appears to have complied with the required reductions in energy usage for buildings however, there is little confidence in the reliability of the data used to report the level of compliance hence Sydney Water obtained a compliance rating of 'Insufficient Information'. Sydney Water has put in place measures to address data reliability and future reporting should be significantly more accurate. Additionally, Sydney Water appears to have in place suitable strategies to continue to meet future required reductions in energy use for buildings. The data contained in the yearly report should be improved, while further reductions in energy use could be achieved by adoption of energy reduction targets across Sydney Water's entire operations, that is, including operational plant.

Sydney Water demonstrated 'Full compliance' with the Licence requirements relating to the Botany Wetlands and the management of Trade Waste.

9.2 SUMMARY OF REQUIREMENTS

This section of the audit report addresses the following clauses:

- 9.1 – Environmental Indicators;
- 9.2 – ESD Indicators;
- 9.3 – Environment Plan;
- 9.4 – Energy Management;
- 9.5 – Botany Wetlands; and
- 9.7 – Trade Waste.

In summary, Clauses 9.1 and 9.2 of the Operating Licence require Sydney Water to monitor and compile data on the ESD and Environmental Indicators, to report to the Licence Regulator by 1 September each year on its performance in relation to the indicators and to make the report available to the public within one month of its receipt by the Licence Regulator.

Clause 9.3 requires Sydney Water to prepare a five-year Environment Plan by 30 September 2000 involving public consultation. The Plan must contain environmental strategies, endorse ESD principles and be recognised in business plans. The Plan must set targets using the environmental and ESD indicators, timeframes for achieving the targets and be available to the public. Sydney Water must also produce an annual report detailing progress on meeting the Plan as well as compliance with the targets and timetables.

Clause 9.4 requires Sydney Water to adopt energy reduction targets for buildings, identified in the NSW Government Energy Management Policy, and to report by 1 September each year to the Licence Regulator on its performance in relation to the targets.

Clause 9.5 requires Sydney Water to implement the Botany Wetlands plan of management and to report on its compliance with the plan by 1 September each year.

Clause 9.7 requires Sydney Water to prepare a trade waste policy that contains objectives and performance indicators, and it must report no later than 1 September each year on its progress in satisfying the objectives and indicators.

This section of the audit also includes the reports by the person undertaking the Annual Audit on Sydney Water's performance and/or compliance in relation to the environmental indicators, the ESD indicators, the Environment Plan, energy conservation targets, Botany Wetlands Plan of Management and trade waste related objectives as required by Clause 10.2.1 of the Operating Licence.

9.3 DETAILS OF COMPLIANCE

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	NA	No requirement.
(i)	Sydney Water's performance in relation to the environment indicators under clause 9.1	No Requirement	<p><i>There is no Compliance Requirement against this clause as the clause requires an assessment of 'performance' by the Auditor rather than 'compliance'.</i></p> <p>The Auditor was not able to prepare a meaningful or comprehensive report on Sydney Water's performance in relation to the environmental indicators. Sydney Water has not prepared a report that fully outlines its performance against the environmental indicators as required by clause 9.1. The report presented by SWC to the Licence Regulator, in order to permit the Licence Regulator to consider and report on this matter, was not structured in a form that facilitates a statement of performance against each environmental indicator.</p> <p>It is further noted that numerous environmental indicators were not monitored or compiled for the audit period (refer to table 9.2, Clause 9.1.2) and consequently, Sydney Water has not reported environmental performance against these indicators.</p> <p>Sydney Water did report performance against some environmental indicators in Volume 1 of the Environmental Indicators Compliance Report. No data was presented for any indicators for the previous 10 years as required by the Licence, although for some indicators, data was presented for 7-8 years.</p> <p>The aggregated data presented in Volumes 2 and 3 show trends in the environmental indicators in a database format. Data are presented or plotted as a single point (that represents the "seasonally adjusted estimate") with a confidence interval, for the years 1993/94 to 2000/01 where the data are available. Statistically significant trends are not readily apparent, and the presentation format is particularly not suited for ready interpretation by the general public.</p> <p>Sydney Water should monitor, and compile data on, all the environmental indicators and prepare a</p>

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
			more readily understandable and comprehensive report of its performance against each environmental indicator as required by the Licence so that the Auditor is able to report on environmental performance and identify the trends in performance over time. A reporting format consistent with the format used for the ESD Indicators would significantly improve the reporting of the Environmental Indicators for this Licence.
(j)	Sydney Water's performance in relation to the ESD Indicators compiled under clause 9.2.5	No Requirement	<p><i>There is no Compliance Requirement against this clause as the clause requires an assessment of 'performance' by the Auditor rather than 'compliance'.</i></p> <p>Sydney Water compiled a comprehensive and clear report on its performance in relation to each ESD indicator in the "Towards Sustainability Report 2001". Sydney Water reported on its overall performance against the ESD indicators using the method of '<i>ecological foot print</i>', where the aim would be to minimise the overall <i>footprint</i>. This is the first year Sydney Water has applied the <i>ecological footprint</i> method as an overall performance measure. The challenge for Sydney Water in future years will be to accurately report change in the <i>footprint</i> and interpret it as a meaningful measure of performance.</p> <p>Sydney Water acknowledges that the <i>ecological footprint</i> method has its limitation for an organisation whose mission is to protect the environment and public health. Significant sustainability issues for Sydney Water, such as operational improvements to achieve greater ecosystem protection, may in fact increase the <i>footprint</i> due to greater consumption of energy and materials.</p> <p>In future years Sydney Water will need to demonstrate that the <i>footprint</i> has been considered in all aspects of its operation, particularly in relation to augmentations, upgrades and new initiatives if it is to be used to assist in measuring its ESD performance from year to year.</p> <p>On an individual basis, the performance of Sydney Water against the 29 principal ESD indicators is diverse. Examples are presented below.</p> <ul style="list-style-type: none"> Performance is very high with little scope for improvement for some ESD indicators, such as 99.9% of biosolids recycled from treatment plants, all industrial customers and some 15,000 commercial customers have trade waste agreements to reduce pollution into the sewer, and 100% of new developments paid a developer charge.

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Performance in relation to other ESD indicators shows improvement is being made, such as a 20% reduction in phosphorus released from inland sewage treatment plants to streams, and the completion of the Corporate Environment Management System to complement those that already exist in some operational areas. Sydney Water's performance declined against some key ESD indicators from previous years, for example, water use (ie supplied) increased, energy use increased by 2.9% with an associated increase in greenhouse gases, and the number of sewerage system overflows increased in both dry and wet weather; and Performance against some ESD indicators remained low; only 12% of total sewerage revenue was usage based, 3 of 44 items on the State Heritage Register are managed in accordance with Conservation Management Plans, and unaccounted for water remained at 13.4%. <p>The ESD compliance table prepared by SWC for 2000/01 is presented in the Towards Sustainability Report 2001.</p>
(k)	Compliance by Sydney Water with the Environment Plan under clause 9.3	High compliance	<p>Performance against each of the objectives in the Environment Plan is described in the "Towards Sustainability Report 2001" (pp 8-9 and in greater detail in the section titled "Environment Plan and ESD Indicators Compliance Summary").</p> <p>Generally, Sydney Water's compliance in relation to the Environment Plan is difficult to quantify at this stage. The Plan was adopted at the end of September 2000 and includes objectives for the five-year period to 2005. Thus, at the end of the audit period only 8 months of the five-year program had elapsed and many targets are to be met from 2002 onwards.</p> <p>Sydney Water met most of those targets due in the audit period. It should be noted that the Plan also contains targets that need to be met on a continuous basis. The status of those targets is set out below:</p> <ul style="list-style-type: none"> The Northside Storage Tunnel was commissioned in October 2000, meeting the requirement for the end of 2000 (Objective 2.1).

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> The transport and handling of biosolids from major coastal plants was not resolved by January 2001, but is the subject of a Parliamentary Inquiry due to report in October 2001 (Objective 3.1). Beneficial reuse of water treatment residuals was maximised with none disposed to landfill (Objective 3.2). Maintenance practices such as silt removal, clearing of obstructions and land management were reviewed by June 2001 as required (Objective 4.1). The Trade Waste Policy and Management Plan was implemented (Objective 5.1). Recycling rate for paper in Head office was achieved by July 2001 instead of the target of January 2001 (Objective 6.1). Waste minimisation awareness program was commenced and setting quantitative targets for waste and recycling commenced June 2001. No evidence was available in relation to a program for incorporating waste minimisation into purchasing for major products and services by January 2001. The Heritage and Conservation Register was established by January 2001 but requires considerable review. The Natural Resources Inventory was developed by June 2001 and data for some 200 sites have been compiled. (Objective 7.2) Energy use in buildings was reduced by greater than the 15% target from 1995-2001, but the database is not reliable, see later in this section (Objective 8.2). A corporate EMS that accords with ISO14001 was developed by the due date of June 2001 (Objective 9.1). The review of the EIA process was not completed by June 2001 as required but is expected to be completed by December 2001. (Objective 9.2). One Tier 2 offence and three Tier 3 offences were incurred under the Protection of the Environment Operations Act during the year (Objective 9.5). <p>The compliance table prepared by SWC for the Environment Plan is presented in the Towards Sustainability Report 2001.</p>

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
(l)	Compliance by Sydney Water with the targets in the Energy Management Policy for energy consumption of buildings in clause 9.4.2	Insufficient Information	Refer to Table 9.2 , Clause 9.4.2(a)
(m)	Compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5	Full compliance	Refer to Table 9.2 , Clause 9.5.2.
(n)	Compliance by Sydney Water with the trade waste objectives and performance indicators under clause 9.7	Full compliance	Under the Trade Waste Policy, seven objectives have been developed. These, and the relevant discussion based around compliance achievement, are outlined below:
(n) cont.	Objective 1: Protect receiving waters from toxic substances originating from trade waste discharges	Full compliance	<p>Much of the Trade Waste Policy and restriction of substances stems from the 1999 Environmental Risk Assessment Report. Key substances were identified from the assessment and a number of organophosphorus pesticides identified for total restriction from sewer. Significant monitoring and investigation has been applied in ensuring these substances are prevented from being discharged to sewer. Further studies of ecological testing have incorporated ANZECC's Water Quality Guidelines for Fresh & Marine Waters (2000). Sydney Water's web-site also identifies problem substances. Performance reports show that the main targeted STPs (Bellambi, Port Kembla and Cronulla) have been meeting the target levels for chlorpyrifos during 2000/01.</p> <p>Organophosphorus pesticides have been identified as the main substances of concern, and these will continue to be the targets for setting the 2002 program. The Organo-P Pesticide Education Program Progress Report was presented.</p> <p>Household Collection of chemicals and ecological toxins is an on-going program and leaflets for the 2001 program were reviewed. The 2002 program is yet to be developed.</p> <p>SWC provided copies of the Trade Waste Policy Plan and the Source Control and Pesticide Education Program reports.</p> <p>It is further noted that not all substances identified in the report are tradewaste related. Items such as aluminium and chloramines, for example, are associated with STP processes. Work has reportedly been undertaken in an effort to meet targets for these substance through STP process modifications that are not trade waste related – although it is accepted that the requirement for</p>

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
			phosphorus removal will necessitate chemical addition of aluminium or iron salts.
(n) cont.	Objective 2: Assist Sydney Water to meet relevant environmental, Public Health and other regulations and pollution reduction targets	Full compliance	<p>Pollution Reduction Programs (PRPs) have been put in place for STPs to ensure thresholds for pollutants are met (substances include aluminium, zinc, cyanide, chloramines, diazinon, malathion, MBAS, but vary between catchments). Concentrations of these pollutants entering the sewer have been restricted. A model has been developed incorporating STP licence requirements (EPA's threshold levels - PRPs were established) for effluent quality, as well as biosolids guidelines for necessary classification. This is used to estimate allowable pollutant load, based on average dry weather flow (pollutant concentration is applied as well as mass loadings).</p> <p>Source Control Education Program report was presented to the audit team.</p> <p>Most (large) customers have composite sampling of trade waste discharges. Laboratories must be NATA registered to ensure accurate measurement / analysis of samples and quality control.</p> <p>Sydney Water has identified appropriate analytical methods to use in analysing wastewater. Customers must identify the method applied in their monitoring reports and they must use a NATA accredited laboratory.</p>
(n) cont.	Objective 3: Assist Sydney Water sewage processing operations to produce a guaranteed quality of water and biosolids	Full compliance	<p>Bio-solids:</p> <p>A report has been prepared classifying the proportion of biosolids meeting A, B, C, D criteria and attributing problem areas (such as trade waste) to enhance quality</p> <p>The 2000/01 report identified that 99% of biosolids were suitable for reuse. Problems have previously been identified at Richmond and Port Kembla (mercury and copper, respectively) and investigations are underway. The intention is to regularly review the Trade Waste policy to ensure ongoing compliance and improve strategies.</p> <p>Recycled Water :</p> <p>Performance indicator reports were presented. There are currently no quality specifications / criteria for recycled water quality. However, a new policy is being developed, and items such as Total Dissolved Solids (TDS) are included. Sydney Water advised that they are now looking at establishing base line data. Lithium and beryllium are regarded as potential issues. In addition, the Rouse Hill recycled water scheme is about to come on line and it is considered that background material for future quality requirements will be ascertained with operational experience.</p>

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
(n) cont.	Objective 4: Protect the health and safety of all people working in the sewerage system by applying strict standards for harmful substances	Full compliance	<p>Appendix 8 of the Trade Waste Policy and Management Plan identifies reasons for restricting substances from the sewer.</p> <p>There have been no significant injuries directly attributable to trade waste.</p> <p>Sydney Water advised, however, that it is assessing near misses (potential injuries).</p> <p>Training of personnel in health and safety matters is ongoing. Details of Sydney Water's Achievement Award for Hazard Identification from the National Safety Council of Australia were sighted.</p>
(n) cont.	Objective 5: To protect the system and the plants from damage due to harmful substances from trade waste (TW) sources	Full compliance	<p>Emergency action procedures must be applied following incidents of discharges of flammable / explosive substances, acids and sulphur compounds. OH&S regulations deal with exposure / safe levels of flammable and carcinogenic substances.</p> <p>Sydney Water advised that audit sampling and inspections are undertaken in proportion to the assessed risk to the customer.</p> <p>In addition, explanations to customers are provided to ensure they understand restrictions of substances. There have been instances of termination of customer trade waste agreements.</p> <p>Sydney Water has reviewed oxygen-depleting substances and is looking at reviewing chemical oxygen demand (COD) analysis. It advised that monitoring of nitrates has begun, with the view to using it as an indicator of the onset of septicity.</p>
(n) cont.	Objective 6: Encourage waste minimisation and cleaner production in the commercial and industrial sectors	Full compliance	<p>The key incentive for waste minimisation for industry is via charging for trade waste, although there have there been other incentives – through demonstration projects or forwarding of information showing benefits, e.g. case studies.</p> <p>Sydney Water advises that it is looking to improve links via the web-site with particular relevance to individual industries. It also presents industry specific guidelines for wastewater control from the EPA. No actual advice on trade waste control is available from Sydney Water, but it provides advice on where assistance may be sought and encouragement is also provided.</p> <p>Restaurants are adopting better cleaning methods and use of ingredients / raw materials. Sydney Water advised that work has been undertaken with the printing industry and it is about to start working with the automotive industry.</p>

Table 9.1: Environment: Indicators & Plans – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
			Sydney Water advises that there is an increase in customers taking action to clean their wastewater.
(n) cont.	Objective 7: Encourage and enable further water conservation	Full compliance	Brochures have been produced along industry lines. Sydney Water provided performance indicators for customers, which indicates that there is a reduction in water usage. Examples of water reduction by industrial customers were presented to the Auditors. Sydney Water advised that they advertise the potential for significant savings in using less water. Education of opportunities and potential achievements has been presented to customers.

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
9.1	Environmental Indicators		
9.1.1	Sydney Water must monitor and compile data on indicators of the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of Sydney Water, in accordance with section 14(1)(d) of the Act.	Full compliance	<p>Sydney Water monitors and compiles data for environmental indicators. The data are documented in the Environmental Indicators Compliance Report (EICR), Volumes 1, 2 & 3. The compilation of the data is presented in Volumes 2 and 3.</p> <p>Sydney Water has prepared two manuals to guide the compilation of the data. The first is the “Environmental Indicators Monitoring Program Methods Report” describing the methods and Quality Assurance for monitoring from the field to the laboratory. The other manual is titled “Process for Compiling the Environmental Indicators Compliance Report, 2001” and describes the system of Performance Indicator sheets for compiling the data into the report.</p> <p>Sydney Water is further refining the processes for the storage and compilation of the data for the environmental indicators by the establishment of a new database and continuous improvement of documentation. The “Environmental Indicators Monitoring Program” manual provides the testing protocols for checking the reliability of the data.</p> <p>A considerable quantity of data is collected on the environmental indicators, opening the possibility for the data to become degraded during compilation. Sydney Water commissioned the Sustainable Investment Research Institute (SIRIS) and the Snowy Mountains Engineering Corporation (SMEC) to independently verify the accuracy of the data in the draft Environmental Indicators Report 2000/01. The report is titled “Towards Sustainability Report 2001 & Environmental Indicators Compliance Report 2001 – Verification Report, October 2001”. The report concluded that the data trails were easily identifiable and traceable, that the majority of the data were accurate and that the written statements made in the report accurately reflect the results and progress achieved.</p> <p>The Report also concluded the systems and processes to generate the report are sound but that further improvement is possible to overcome data inaccuracies. The few data inaccuracies identified were corrected before the final Report was presented to IPART.</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
9.1.2	The environmental indicators used are to accord with those published in the Governmental Gazette on 15 December 1995, except for those indicators solely applicable to the Sydney Catchment Authority (SCA).	Partial compliance	<p>The environmental indicators monitored and compiled by Sydney Water were compared against those published in the Government Gazette Number 152 on 15 December 1995. The majority of the indicators have been monitored and data has been compiled in Volumes 2 & 3 of the 'Environmental Indicators Compliance Report' (EICR).</p> <p>It is noted, however, that many of the indicators are not monitored and compiled. Sydney Water advises that many of the indicators were not monitored during this audit period as a consequence of the monitoring review processes guided by the 'Environmental Indicators Monitoring Program of Sydney Water' (EIMP). A review of the indicator program was undertaken by the CSIRO (1997/1998) and the outcomes of the review were accepted by the EPA in November 1999. The review recommended against monitoring of all indicators each year. It is noted that these outcomes were not included in the current Operating Licence issued in April 2000 hence Sydney Water is in breach of its Licence and a 'Partial compliance' has been awarded.</p> <p>Indicators which have not been compiled and presented in the Volumes 2 & 3 of the EICR are listed below:</p> <ul style="list-style-type: none"> • <i>Schedule 10 chemicals</i> (a suite of over 33 pollutants identified in the Act) for ocean sediment and river and stream sediment have not been monitored and data have not been compiled for the audit period. • <i>Grease</i> from sewage effluent discharges to rivers and streams was monitored but the data have not been compiled in the EICR for the audit period. • Receiving <i>water quality indicators</i> for sewage effluent discharges to rivers and streams have not been monitored and data have not been compiled for the audit period for tributaries other than for the Hawkesbury Nepean River. For example Georges River is omitted. • For the Sewerage Reticulation System, <i>Discharge Quality, Water Quality, Biota or Sediment</i> environmental indicators have not been monitored and data have not been compiled for the audit period. It is noted that the indicator for biota "<i>complete current studies on intertidal rock platform communities as basis for ongoing monitoring</i>" is not presented in the EICR report, however, it

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>continues to be monitored and the data continues to be compiled.</p> <ul style="list-style-type: none"> For the Land Application of Bio-solids, application locations have not been presented in the EICR report. <p>It would appear that the environment indicators not being reported by Sydney Water are critical for assessing the performance of its existing systems and for guiding priorities for expenditure in its capital works program. The effectiveness of the program to reduce sewer overflows would appear to be dependent on the data. However, if Sydney Water believes less frequent or reduced monitoring of environmental indicators is acceptable, compared to that currently required by the Licence, a submission should be made to IPART justifying the revised program. This was not undertaken prior to the commencement of the revised Operating Licence in January 2000, despite some of the required monitoring ceasing in 1996.</p> <p>Sydney Water should monitor and compile data for all environmental indicators in accordance with this Licence Condition. Data that Sydney Water believes is not relevant for monitoring its environmental performance should be submitted to IPART with justification for amendment to the requirement as part of the mid-term review.</p> <p>The indicators that are now solely applicable to the Sydney Catchment Authority, listed under the heading "Catchments and Water Storages", are no longer monitored by Sydney Water. The Licence expressly permits this exception.</p>
9.1.3	Sydney Water must report on its performance in relation to the indicators compiled under clause 9.1.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as a part of the Annual audit, by no later than 1 September each year,	Partial compliance	<p>The 'Environmental Indicator Compliance Report' (EICR) 2001 is the document presented by Sydney Water to the Licence Regulator to meet this requirement. SIRIS and SMEC, Victoria has independently verified the validity of the data as discussed in the findings of Clause 9.1.1. It is important to note however, that the verification scope was limited and that compliance of the EICR 2001 with the statutory requirements of the Operating Licence was beyond the scope of the report.</p> <p>Sydney Water advises that the reporting structure of the EICR 2001 has been designed to meet various stakeholder needs. In relation to compliance with the Operating Licence however, Sydney Water has not fully met the requirements of the Licence as it only partially reported on its performance with the environmental indicators required to be compiled under clause 9.1.1 (gazetted indicators). A</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>review of the report concluded that:</p> <ul style="list-style-type: none"> Volume 1 summarises the performance of Sydney Water in four key areas. These are wastewater management, sewage overflows, stormwater and progress towards the Special Objectives (as set out in the Sydney Water Act and the POEA Act). The reporting structure does not facilitate a clear statement of performance in relation to each of the gazetted indicators. Volumes 2 and 3 present computer print outs consisting of tens of thousands of data items for the indicators however, they do not present an interpretation of the data in order to report on Sydney Water's performance. <p>The EICR 2001 does not provide a clear report on Sydney Water's performance with the gazetted environmental indicators. Numerous gazetted indicators are reported to varying degrees in the key functional areas in Volume 1. A high level of performance is reported for many gazetted indicators particularly related to sewage effluent discharges to ocean. In other key areas such as sewer overflows however, there is little correlation between the gazetted indicators and Sydney Water's reporting of performance.</p> <p>It is further noted that Sydney Water is currently engaged in a review of its monitoring program. It has listed a number of criteria in the report to consider as part of this review. These criteria do not include compliance with the requirements of the Operating Licence. Compliance with the Operating Licence should be included as a key criteria for the review.</p> <p>The EICR was provided to the Licence Regulator on 31 August 2001 (by the due date).</p>
9.1.4	The yearly report provided by Sydney Water must provide information which enables year to year comparison in relation to Sydney Water's performance in this area. In particular, Sydney Water is to use the indicators with historical annual values over at least the previous 10 years, where comparable data permits such a compilation.	Low-Partial compliance	<p>Year to Year Comparison</p> <p>Sydney Water has provided aggregated data that enables year to year comparison of the indicators that were monitored. These data are presented in Volumes 2 and 3 of the EICR 2001. The aggregated data shows trends in the environmental indicators in a database format. Data are presented or plotted as a single point (that represents the "seasonally adjusted estimate") with a confidence interval for the years 1993/94 to 2000/01, where the data are available. Statistically significant trends are not readily apparent.</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>Volume 1 of the EICR presents the interpretation and discussion of the data, however, as previously noted not all indicators are presented or discussed. There is only limited discussion of year to year comparisons.</p> <p>10 Years of Data, where comparable data permits such a compilation</p> <p>Sydney Water has not provided 10 years or more of data for any environmental indicator. Data for many of the environmental indicators have been presented for 7-8 years, whereas for some environmental indicators, only 1-2 years of data have been presented. However, other documents produced by Sydney Water such as Environmental Impact Statements and Facilities Plans indicate that it is highly likely that comparable data exists for a period longer than 7-8 years.</p> <p>Improved compliance with this clause would be attained if Sydney Water undertook a systematic review of data available from all programs/studies to verify whether it is comparable with data collected for the environmental indicators.</p> <p>Sydney Water has not undertaken a systematic review, therefore it is the auditors view that such data may be available for inclusion in the EICR if it were to be sourced by Sydney Water.</p>
9.1.5	<p>The yearly report is to be made available to the public by Sydney Water within 1 month after receipt by the Licence Regulator.</p> <p>Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations</p>	Non compliance	<p>This is a technical non-compliance as Sydney Water had prepared to have the Report released by 1 October 2001 however, the Licence Regulator agreed to a request by Sydney Water to delay release of the EICR to coincide with EPA's BeachWatch Report. [The EICR relies on information also contained in the BeachWatch Report.] The EPA BeachWatch report was released in the last week of October 2001 and Sydney Water released the Environmental Indicators Compliance Report at the same time</p> <p>Sydney Water is planning to provide 3,000 copies to libraries and Customer Service Centres and to provide the Report on its website, free of charge.</p>
9.1.6	The environmental indicators in clause 9.1.2 are to be	No Requirement	The environmental indicators were reviewed by CSIRO in 1998 and a copy of the report was forwarded to the EPA for comment. Sydney Water has suggested to the EPA that the monitoring of

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
	reviewed as part of the End of term review		environmental indicators should be amalgamated into one single set for all environmental monitoring. This was under review at the time of the audit. The Auditor concurs that there is scope for rationalisation of the reporting of the various indicators in light of the experience gained over the last five years and the proliferation of indicators in the various regulatory documents that bind Sydney Water.
9.2	Ecologically Sustainable Development (ESD) Indicators		
9.2.1	Sydney Water must develop measures to indicate the degree to which its activities and services comply with the principles of ESD.	Full compliance	The ESD indicators were developed through a series of four workshops in accordance with the principles of ESD. The ESD indicators are documented in the 'Environment Plan 2000 – 2005' and are linked to the 10 key objectives within that plan.
9.2.2	<p>Sydney Water must develop a draft list of ESD Indicators within 1 month after the Commencement Date (12/4/00).</p> <p>The draft list must have regard to:</p> <ul style="list-style-type: none"> a) Corporate management (including corporate policy and planning, and corporate asset management) b) Management of the system c) The planning, design & construction of: <ul style="list-style-type: none"> i) New Systems; ii) The upgrading of existing Systems; and iii) Depots. 	Full compliance	<p>A draft list was available prior to the 11/3/00, at which time it was released for public comment (see clause 9.2.3). The draft list was sighted.</p> <p>The draft list of ESD indicators addressed the key areas of water, pollution, global warming, energy, material life cycles, bio-diversity, social, economic and management issues.</p> <p>This list appeared to be comprehensive and addressed the areas required by the clause.</p>
9.2.3	<p>The draft list developed by Sydney water must undergo public consultation where the public has at least 20 days to provide their comments.</p> <p>Specific comments must also be invited from the EPA,</p>	Full compliance	<p>A Sydney Water document titled 'Public Consultation on Indicators for Ecologically Sustainable Development', January 2001, demonstrates that the draft list of ESD indicators was circulated for public comment for 27 days between 11/3/00 and 7/4/00.</p> <p>Submissions from the EPA, NPWS, NSW Fisheries and some of the peak environment non-</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
	DLWC, NPWS, NSW Fisheries, SEDA and peak environment non-governmental organisations.		<p>governmental organisations are documented in the Sydney Water Public Consultation Report on Indicators for Ecologically Sustainable Development, January 2001. Peak environment groups included the Nature Conservation Council, ACF, OceanWatch, Total Environment Centre and Friends of the Earth.</p> <p>NPWS, DLWC and peak environment non-governmental organisations were involved in the series of workshops held during the development of the draft list of ESD indicators (see clause 9.2.1).</p>
9.2.4	Sydney Water must present a final list of ESD Indicators to the Minister for approval, and if approved, for publication in the Gazette, within three months of the close of submissions, following public consultation under clause 9.2.3	Full compliance	<p>An internal memorandum dated 23/6/00 from the Managing Director to the Minister submitted the final list of ESD indicators for approval.</p> <p>The final list of ESD indicators was gazetted on the 30/6/00 in NSW Government Gazette No. 81.</p>
9.2.5	Sydney Water must commence monitoring and compiling data on the ESD Indicators from the later of the Commencement Date (12/4/00) and 1 July 2000	Full compliance	<p>Monitoring and compiling data commenced by 1 July 2000. Data relevant to a number of the ESD indicators was being collected prior to this date as reported in the 'Towards Sustainability Report 2001'. The ESD Indicators complies with the list of Gazetted ESD Indicators.</p> <p>Sydney Water commissioned the Sustainable Investment Research Institute (SIRIS) and the Snowy Mountains Engineering Corporation (SMEC) to independently verify the accuracy of the data in the 'Towards Sustainability Report 2001'. The report is titled 'Towards Sustainability Report 2001 & Environmental Indicators Compliance Report 2001 – Verification Report, October 2001'. The report concluded that the data trails were easily identifiable and traceable, that only minor anomalies were present in the data and that the written statements made in the report accurately reflect the results and progress achieved.</p>
9.2.6	Sydney Water must report to the Licence Regulator on its performance in relation to the ESD indicators compiled under clause 9.2.4 for the previous 12 months, by no later than 1 September each year, to enable the Licence Regulator to consider and report on the matter as a part of the Annual audit	Full compliance	<p>Sydney Water covering letter from Managing Director to IPART dated 31/8/01 confirms that the 'Towards Sustainability Report 2001' was prepared and submitted by the required date.</p> <p>The Report provides comprehensive and clear information in relation to performance for the previous 12 months for each of the ESD Indicators. A table summarising compliance with each indicator appears in Appendix H of this report. Performance is further discussed in Sections 9.4 & 9.5.</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
9.2.7	The yearly report provided under Clause 9.2.6 is to be made available by Sydney Water to the public within 1 month after receipt by the Licence Regulator. Copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations	Non-compliance	This is a technical non compliance as the 'Towards Sustainability Report 2001' was available for release on 1 October 2001; however, it could not released until the EPA BeachWatch data for 2000/01 was available for release in late October 2001. This is further discussed in Section 9.6.1 of this report. Sydney Water is planning to provide 3,000 copies of 'Towards Sustainability Report 2000' to libraries and Customer Service Centres and to provide the Report on its website, free of charge.
9.2.8	The ESD indicators in clause 9.2.4 are to be reviewed as part of the End of term review (1/1/04)	No Requirement	This requirement does not fall due within this audit period. Performance has been assessed against the ESD indicators for only one year and it is too early to suggest possible amendments.
9.3	Environment Plan		
9.3.1	Sydney Water must produce a five year Environment Plan by the later of the Commencement Date (12/4/00) and 30 September 2000. After that Sydney Water must produce further five year Environment Plans every 5 years	Full compliance No Requirement	The Chairperson approved the 'Environment Plan-2000–2005' on the 28/9/00. No requirement in this audit period.
9.3.2	Sydney Water must engage in public consultation in developing the Environment Plan	Full compliance	Sydney Water undertook public consultation during the development of the Environment Plan. This is documented in "Public Consultation Report, Sydney Water's DRAFT Environment Plan 2000-2005, January 2001". The Report addresses all comments received from government agencies, local councils, business organisations, environment groups and the public, on the draft Plan from four formal workshops and the public exhibition from 5/8/00 to 1/10/00.
9.3.3	The Environment Plan must:		
9.3.3(a)	Contain details of Sydney Water's water, waste water and stormwater strategies, as well as the environmental aspects of its other activities such as waste minimisation and heritage	Full compliance	'WaterPlan 21' is Sydney Water's 20-year plan for water, wastewater and stormwater management. The key environmental initiatives from 'WaterPlan 21' are presented as the Water Strategy, Wastewater Strategy and Stormwater Strategy in sections 2.1.1, 2.1.2 and 2.1.3 respectively of the 'Environment Plan 2000-2005'. The environmental aspects of other activities are also addressed in subsequent sections of the Plan,

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			the principal sections are trade waste, waste minimisation, land and water stewardship (includes heritage), energy management, environment management practices and tools, and research and development.
9.3.3(b)	Endorse ESD principles	Full compliance	The Environment Plan endorses and adopts the ESD principles in section 1.3. Eight of the ten objectives in the Plan are directly associated with one or more of the ESD Indicators. The indicators are used to measure Sydney Water's performance against the requirements of the Plan.
9.3.3(c)	Be recognised in Sydney Water's business plans	Full compliance	<p>The Environment Plan 2000 –2005 is recognised in:</p> <ul style="list-style-type: none"> Sydney Water Corporate Plan 2000-2005, that includes a commitment to “deliver and implement Environment Plan”; and Sydney Water Corporate Plan (annual review) 2001, that includes a commitment to “conduct operations in compliance with the principles of ESD through implementing the Environment Plan 2000-2005”. <p>The Plan is also recognised in Sydney Water Divisional Plans.</p>
9.3.4	<p>The Environment Plan must set targets and timetables for compliance by Sydney Water with those targets set over the term of the Environment Plan.</p> <p>These targets must utilise the environmental and ESD indicators in clauses 9.1 and 9.2 and also the targets and indicators in clauses 9.6 and 9.7</p>	Full compliance	<p>Targets and timetables for compliance with those targets over the term of the Plan are documented in Part 3 of the Environment Plan. These are based on 10 key objectives and a number of identified actions to meet these objectives.</p> <p>For each of the 10 key objectives in Part 3, relevant Environmental (clause 9.1) and ESD (clause 9.2) Indicators are referenced as well as Trade Waste Performance Indicators (clause 9.7). The targets in the Plan include the requirement for “compliance with Pollution Reduction Targets set by the EPA” (clause 9.6).</p>
9.3.5	The Environment Plan must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of	Full compliance	<p>The Environment Plan 2000 –2005 is available on the Sydney Water website and available for downloading free of charge.</p> <p>Initially 25 copies of the plan were sent to each customer centre and were available free of charge to the public. Additionally, staff at the customer centres will print a copy from the website for a customer</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
	Operations, in each case also free of charge		<p>if no printed copies are available.</p> <p>Sydney Water provided a copy of the mail merge document, indicating the Plan, was sent to 54 public libraries within the Sydney Water Area of Operations.</p>
9.3.6	<p>The report detailing Sydney Water's progress in meeting the Environment Plan, and in particular, in complying with the targets and timetables in clause 9.3.4 are to be compiled on a yearly basis.</p> <p>Within 1 month of its completion, the report must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operation, in each case also free of charge</p>	Partial compliance	<p>This clause was awarded a 'Partial compliance' as Sydney Water did not technically comply with the release period for one of the reports, although it did satisfy other requirements of this Clause.</p> <p>Sydney Water has produced the following reports detailing its performance in relation to the Environment Plan 2000 –2005:</p> <ul style="list-style-type: none"> • Annual Environment & Public Health Report 2000, for the audit period January – June 2000; and • Towards Sustainability Report 2001, for the period July 2000 – June 2001. <p>The report provides details of performance against each of the 10 objectives and actions. This is further discussed in Sections 9.4 & 9.5.</p> <p>The Annual Environment & Public Health Report 2000 was available within one month of its completion on the Sydney Water website and was distributed to the same locations as the Environment Plan 2000-2005 (see clause 9.3.5).</p> <p>As discussed for Clause 9.2.7 however, the Towards Sustainability Report 2001 had not been released by 26 October (technical non-compliance) because Sydney Water intended it be released at the same time as the EPA BeachWatch report in late October. However, Sydney Water provided a copy of the Report to IPART on 1 September 2001 and had prepared it for release on 1 October 2001.</p> <p>Sydney Water advised that this Report will also be posted on the Sydney Water website for downloading free of charge and will be distributed to the same locations as the Environment Plan 2000-2005 (see clause 9.3.5).</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
9.3.7	Amendments may only be made to the Environment Plan following public consultation	No Requirement	No amendments to the Environment Plan were made within the audit period, other than those required by the Licence.
9.4	Energy Management		
9.4.1	In this clause: Energy Management Policy means the energy management policy of the NSW Government released by the NSW Department of Energy (now the Ministry of Energy and Utilities) in 1998 and updated from time to time.	No Requirement	This clause is a definition.
9.4.2	Sydney Water must adopt the following targets in the Energy Management Policy for energy consumption of buildings:	Full compliance	These targets are adopted by Sydney Water in: <ul style="list-style-type: none"> • Sydney Water Energy Management Policy (Rev. 1 1999); • Sydney Water Corporate Energy Management Plan 1999 – 2001; • Sydney Water Group Property Business Plan 2001/2002, Section 7.6; • Sydney Water Business Plan 2001-2005, Section 4.3; • Sydney Water Asset Management Strategies Report Version 1 – July 23,2001, Section 1.10; and • Sydney Water Energy Management Folio (No. B29/EP99.1a/EP2000.3.3/EP2000.8.1/8.2).
9.4.2(a)	15% reduction from the 1995 level by 2001	Insufficient information	Sydney Water reported that energy consumption has reduced from 24,528,440 kWh in 1995-96 to 20,578,341 kWh in 2000/01 for the principal office buildings. This is a reduction of 16.1% for energy use in “buildings” between the 1995/96 and 2000/01 financial years as documented in:

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Internal Asset Management Division report, 23/8/01; and Sydney Water Operating Licence Reports to the Licence Regulator, Part 5 – Energy Management, 1/9/01. <p>The base data for 1995/96 has a high degree of uncertainty, while Sydney Water believes the information for 2000/01 is accurate to within ± 1-5%. Procedures are in place to compile energy use more accurately from 2001. This is further discussed in Section 9.4.</p>
9.4.2(b)	25% reduction from the 1995 level by 2005	No Requirement	<p>Sydney Water has a number of programs in place to achieve this target:</p> <ul style="list-style-type: none"> Sydney Water Corporate Energy Management Plan 1999-2001; Sydney Water Group Property Business Plan 2001/2002, Section 7.6; Sydney Water Business Plan 2001-2005, Section 4.3; and Sydney Water Asset Management Strategies Report Version 1 – July 23,2001, Section 1.10. <p>Additionally the Sydney Water Corporate Energy Management Plan 1999-2001 is currently being reviewed and updated with new initiatives including the proposed purchase / construction of an energy efficient building to replace head office.</p>
9.4.2(c)	Any subsequent targets set by the Energy Management Policy	No Requirement	There have been no subsequent targets set for this audit period.
9.4.3	By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to clause 9.4.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.	Full compliance	<p>Sydney Water provided the required report to the Licence Regulator by the 1/9/01 as documented in:</p> <ul style="list-style-type: none"> Sydney Water Operating Licence Reports to the Licence Regulator, Part 5 – Energy Management, 1/9/01; and

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Sydney Water covering letter to IPART enclosing the above report dated 31/8/01. <p>This is further discussed in Section 9.4 below.</p>
9.5	Botany Wetlands		
9.5.1	Botany Wetlands Plan means the plan of management (POM) for the area known as Botany Wetlands, issued by Sydney Water in December 1997.	No Requirement	<p>POM (1997) outlined actions to be undertaken and delegated responsibilities to members of Botany Wetlands Environmental Steering Committee (BWESC).</p> <p>The POM was reviewed in February 2000</p>
9.5.2	Sydney Water is to implement the Botany Wetlands Plan in conjunction with other appropriate persons	Full compliance	<p>Current Operating Licence requires implementation of POM (not previously required)</p> <p>There are 69 actions for implementation in POM under following headings:</p> <ul style="list-style-type: none"> - Ecological Rehabilitation (26 actions) – is the primary focus (\$1.3m over 5 years) of the POM. - Water Quality (10 actions) – not a major focus, though opportunity to increase emphasis via monitoring at 2½ yearly intervals. - Operations (19 actions) – programs include Carp control and some improvement in native fish numbers. - Landscape and Visual (6 actions) – a lower priority program which should, after 6 years, be reviewed and funds allocated to priority actions, otherwise consideration should be given to its removal from POM. - Land Management (8 actions) – positive achievements have occurred under this program to bring the adjacent golf courses (3) under a uniform EMP. <p>In summary, 9 actions (13%) have been completed and a further 26 actions (38%) have commenced</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>and are continuing. Another 15 actions (22%) are being undertaken on an 'as needs' basis. This equates to 50 actions (72%) which have commenced or have been completed out of a total of 69.</p> <p>Over the last 5 years, Sydney Water has expended some \$4.2m in the wetland and it is estimated expenditure will be in the order of \$430k pa. Present expenditure approximately \$350k pa (as for previous 5 years). Annual Sydney Water funding has provided the funds requested by the BWESC however, allocating funding across projects outlined in POM is a matter for BWESC to negotiate at meetings.</p> <p>Actions in POM are prioritised but have been strongly focussed on completing the weed management project. This program needs to be largely completed to enable other programs to comply with the schedules for future projects.</p> <p>The BWESC reviews the POM each 12-18 months or as needed. Opportunities are available, and it is recommended that; a 5 year program to implement the Botany Bay Wetlands Plan of Management is developed to coincide with the Operating Licence term; further annual programs and timelines be developed as a basis for future funding; and Key Performance Indicators (KPI) are used to measure achievements for example; ecological surveys at 2½ year intervals to coincide with midterm review, gross pollutant trap (GPT) tonnages, and water quality monitors.</p> <p>The main projects being undertaken at present include "Weed Management and Restoration Project" (\$275Kpa totalling \$1.3m over last 5 years); water quality monitoring; "Removal of European Carp" via electrofishing and restocking (\$45-50Kpa); compilation of golfcourse EMPs; and GPT maintenance. Sydney Water expects weed funding to drop to approx. \$150k pa over the next 10 years.</p> <p>BWESC consists of Sydney Airport Corporation Limited (SACL), Botany Bay City Council (BBCC), NSW Environmental Protection Authority (EPA), Roads and Traffic Authority (RTA), National Parks and Wildlife Service (NPWS). Meetings held to discuss new programs, and bid for budget in the next financial year.</p> <p>BWESC aims to meet regularly, however over the last 18 months, the committee has experienced a lack of commitment from members. Sydney Water retains the major responsibility for initiating, completing and funding projects. However, interaction is also achieved through numerous other</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			catchment and land use committees.
9.5.3	By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its compliance with the Botany Wetlands Plan for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit	Full compliance	<p>The Previous audit, 1999 – 2000, reported 'Full compliance' for the first Annual Progress Report, completed 1 September 2000.</p> <p>Document compliance is reported in the "Botany Wetlands Plan of Management Update on Works to Date 30/06/01" to gauge progress against scheduled events for year.</p> <p>Compliance monitoring, using Ecological Monitoring Indicators, is undertaken using baseline data (from 1992), treatment data (progressive projects) and recovery data (environmental response).</p> <p>Species diversity indices are being developed, specifically for wetlands.</p> <p>The "Weed Management and Revegetation 99-00" report documents the achievements of the program over the previous year. The report also contains forecasts for the next term. Significant achievements noted include removal of 99% of <i>Ludwigia</i> weed upstream of Wentworth Avenue; revegetation of the Banksia scrub area and supplementary planting; and the ongoing surveillance, treatment and rehabilitation of the wetland.</p> <p>Ecological Rehabilitation program indicates the wetlands are capable of fast recovery. New native fauna species are being detected and a number of previously stressed species are gradually returning to the wetlands.</p> <p>Carp removal project has involved the expenditure \$40-50k p.a. via electrofishing and restocking with other native species. Developments have been reported in the document "Removal of European Carp"</p> <p>Gross pollutant traps are regularly maintained and emptied.</p> <p>The three golf courses surrounding wetlands have been required to develop individual, though coordinated EMPs as part of their lease arrangement</p> <p>An external review of a BWESC's functioning is planned. There is a need to identify respective roles and responsibilities, as Sydney Water is presently responsible for maintaining momentum on most</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			projects.
9.5.4	Prior to the commencement of the End of term review, Sydney Water must review the Botany Wetlands Plan in consultation with EPA, the Department of Land and Water Conservation, National Parks and Wildlife, and peak environmental non-governmental organisations for the purpose of advising the Minister whether any amendments are required to the Plan	Full compliance	<p>POM has been reviewed to date on an 'as needs' basis. The last revision occurred in February 2001 and included a detailed project status. The POM is scheduled for review prior to the end of the Licence period – probably early 2002.</p> <p>Reviews of POM have previously been conducted at 12-18 monthly intervals. Actions have been updated and added to POM rather than eliminated at "completion".</p> <p>BWESC agree that a major review of POM should occur after significant milestones have been achieved (for example, the completion of weed management program) as it is difficult to introduce new programs until this major project is completed and weed infestations are brought under control. This review should include peak environmental committees and a mechanism for public input (perhaps through BBCC).</p> <p>The EPA has confirmed it participated in the Botany Wetlands Plan of Management and that overall, there were no major amendments required to the POM. The EPA is of the opinion that Sydney Water's performance in this area has been satisfactory.</p>
9.7	Trade Waste		
9.7.1	Sydney Water must prepare a trade waste policy and management plan, which must include trade waste water objectives and performance indicators. Sydney Water must ensure that the process of preparing the trade waste policy and management plan includes public consultation in accordance with clause 1.2.2 on a discussion paper before the plan is finalised	High compliance	<p>A new Trade Waste Policy and Management Plan came into force 31 July 2001. The document contains the objectives of the plan and performance indicators.</p> <p>The consultation process undertaken by Sydney Water in preparing the plan did not meet the full requirements of clause 1.2.2 of this licence. The process undertaken, however, was aligned with clause 1.2.2 to a high degree.</p> <p>The consultation period had been undertaken over a 2-year period (preceding the current Licence and clause 1.2.2) with customers and a number of groups including the Customer Council, Industry Associations, regulators, Department of Health, Local Government Association, DLWC, and Peak Non-Government Environment organisations. In addition a series of seminars for all customers was held in and around Sydney and the Illawarra to provide forums for feedback and discussion.</p>

Table 9.2: Environment: Indicators & Plans – Part 9 Licence Clauses

Clause	Requirement	Compliance	Findings
			Discussions with the Independent Pricing and Regulatory Tribunal were held, and the pricing component of the policy was endorsed by IPART and ratified after alteration of one of the provisions.
9.7.2	By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in satisfying the objectives and indicators under clause 9.7.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit	Full compliance	Annual report on Trade Waste Objectives and Performance Indicators. The report was presented to IPART prior to 1 September 2001, and identified progress in satisfying the objectives during the reporting period.

9.4 DISCUSSION

9.4.1 Rationalisation of Environmental Indicators and Reporting Requirements

Sydney Water is required to monitor and report its performance against various indicators; including Environmental Indicators required by section 14(1)(d) of the Act, ESD Indicators required by clause 9.2 of the Licence and chemicals in sewage discharges (Schedule 10 substances) required by section 23 of the Act. Sydney Water is well advanced in ensuring the technical as well as the lay reader readily understand its presentation of information on performance against the ESD indicators. Further attention is required to help ensure its reporting of performance against the Environmental Indicators can be clearly understood in a clear and meaningful manner.

Further to this, it is evident that the collation and reporting of the required data requires extensive effort by Sydney Water. This results in the production of comprehensive reports which can be confusing to the general public and other interested parties who have limited background knowledge and understanding of the required Sydney Water processes. This confusion is largely generated through the presence of significant overlaps and duplication between the indicators and objectives, the number and expansive nature of the reports, and the presentation format.

It would be beneficial to all parties involved to streamline the requirements on Sydney Water in terms of both data collection and reporting for environmental performance. In the interim, Sydney Water should endeavour to produce one clear and simple report describing its performance in relation to the ESD indicators, the Environmental Indicators and the Environment Plan. The Environment Plan establishes the objectives and targets and sets out a suitable framework for structuring the reporting on the ESD and Environmental Indicators in accordance with the Operating Licence. The report should enable a lay reader to understand the environmental performance of Sydney Water and to understand the trends in environmental performance over the past decade.

9.4.2 Energy Management

Energy Reductions for Total Operations

The Government's Energy Management Policy applies to "buildings" only. The Sydney Water definition of "buildings" is major office buildings, major depots and major workshops. It does not include any buildings associated with treatment plants or pumping stations nor does it include operational plant.

Given that under this definition Sydney Water "buildings" only represents approximately 4% of total Sydney Water energy usage, savings of 15% then represents only 0.8% of the total energy used by Sydney Water.

Sydney Water indicated that it would not be feasible to accept these reduction targets across all its operations as overall operational energy use is increasing as population increases and plant upgrades to improve performance are constantly required by regulators.

While the auditor acknowledges that these targets on buildings achieve energy savings and Sydney Water has documented programs to achieve energy usage reductions across all its operations beyond that specifically required in this clause, it is evident that the setting of practical and realistic targets for other areas of Sydney Water operations could result in significantly greater financial and environmental benefits.

Energy Reduction for Buildings

The reported reduction in energy use of 16.1% for buildings is based on data of limited accuracy. Up until approximately 1999, data on energy usage was based on the collation of fragmented and ad hoc recording of information sourced from hardcopy energy bills from four utility providers to approximately 1,200 individual billing centres. As a result, Sydney Water estimates that the accuracy of the 1995/96 data is in the order of $\pm 5-10\%$. Sydney Water estimates that for 2000/01 the data reliability is $\pm 1-5\%$.

During 1999, Sydney Water began to put in place arrangements with the utility providers for energy billing to be provided centrally (ie. one bill) and electronically which allows more accurate recording and tracking of energy usage.

The reported reduction in energy use appears to have been largely achieved through the rationalisation of administrative services including the sale of a number of sites and reorganisation of staff locations to make better use of available building space. While this does not represent the implementation of any significant energy efficient measures or infrastructure, it is a valid and appropriate measure to reduce costs, including energy. Sydney Water has commissioned energy audits of its major buildings and reports that, with the exception of its Head Office building, it is difficult to identify any further economically feasible ways to significantly reduce energy use.

Sydney Water is considering acquiring or leasing a more energy efficient building to replace its current energy inefficient Head Office building. The proposed building will be required to achieve a 4.5 star (out of 5) rating for the base building under SEDA's Building Greenhouse Rating Scheme.

Annual Report of Performance

The annual report to the Licence Regulator identifies the percentage reduction in energy use and does not provide the actual energy usage figures. Energy usage should be quantified in future reports.

9.5 FACTORS AFFECTING COMPLIANCE

9.5.1 Public Release of Annual Reports

Clauses 9.1.5, 9.2.7 and 9.3.6 require Sydney Water to make available to the public the yearly report on its performance against the Environmental Indicators, the ESD Indicators and the Environment Plan within one month after receipt by the Licence Regulator. Sydney Water did not make these reports available to the public by this deadline, and so technically, did not comply with the requirements of the Licence.

The annual report prepared by Sydney Water on its performance against the Indicators contains comment on beach water quality for Sydney and Illawarra beaches. The comment is based on compliance data collected by BeachWatch. The EPA provides the data on the proviso that it is not released prior to the release of the BeachWatch data to the Parliament by the Minister for the Environment. There is high public interest in the BeachWatch data and it is generally released about October/November each year for the preceding financial year. It is therefore not appropriate that Sydney Water release the information prior to its release by the Minister.

Sydney Water needs to reassess the importance or necessity for the inclusion of the BeachWatch data in its performance reports so that it can operate in conformity with its Licence requirements. Alternatively, Sydney Water needs to make a submission to IPART justifying amendments to these clauses at the mid-term review.

It is noted that Sydney Water was ready to make the report available to the public on the required date. Non-compliance with these clauses has occurred as a result of the inclusion of BeachWatch data in the Sydney Water yearly report.

9.5.2 Environmental Indicator Reporting

Sydney Water has not taken a strict interpretation of the Licence requirements relating to Environmental Indicator reporting. This is evident through:

- Non-reporting of some data required by the Government Gazette (15 December 1995) in accordance with Clause 9.1.2;
- Reporting of some data required by the Government Gazette (15 December 1995) on a 'less than' annual basis, not in accordance with Clause 9.1.3;
- Presenting monitoring data for numerous indicators without reporting on performance against the indicators, as required by Clause 9.1.3;
- Limited discussion on year to year comparisons, as required by Clause 9.1.4, on the environmental indicators; and
- Comparable data has not been compiled for the full 10 years, as required by Clause 9.1.4, although other document produced by Sydney Water (such as Environmental Impact Statements and Facilities Plans) indicate it is likely that comparable data exists for at least the 10 year period for some indicators.

Sydney Water argues that the needs of other stakeholders have, over the years, moulded its reporting against the Environmental Indicators to produce the report it presented to the Licence Regulator. Sydney Water further emphasises that variations in the monitoring program from the requirements of the Government Gazette has followed the recommendations of internal reviews of its monitoring program by the CSIRO and conditionally approved by the EPA.

The auditor recognises Sydney Water's obligation to endeavour to meet the needs of all its stakeholders and its need to periodically review and refine its monitoring programs however, this must be undertaken within the requirements of the Operating Licence.

Sydney Water must comply with the reporting requirements of the Operating Licence with respect to Environmental Indicators and any opportunities to improve the monitoring program or its reporting should be referred to IPART for consideration as part of the mid-term Licence review.

9.6 RECOMMENDATIONS

9.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R9.1 Make available to the public the yearly reports on its performance against the Environmental Indicators, ESD Indicators and Environment Plan in accordance with the time requirements of the Licence.
- R9.2 Monitor and compile information for all the environmental indicators and prepares a more readily understandable and comprehensive report of its performance against each environmental indicator, as required by the Licence.
- R9.3 Provide and interpret performance information for the environmental indicators over at least the previous 10 years, where comparable data are available.
- R9.4 Ensure future reports, provided under clause 9.4.3, include information on individual energy use figures for all buildings used to derive the percentage reduction.

9.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R9.5 Consider establishing cost effective and practical energy saving targets for its operational plant in order to provide significantly increased financial and environmental benefits.
- R9.6 Present to IPART, for consideration as part of the mid-term Licence Review, opportunities to refine and improve the suite of environmental indicators used to measure its environmental performance.
- R9.7 Seek to amend the Operating Licence to insert the words "where cost effectively feasible" in the targets in Clause 9.4.2 to reflect the wording of the objective in the Governments Energy Management Policy.
- R9.8 Consider rationalising its environmental performance reporting in relation to the ESD and Environmental Indicators, and rationalise its reporting in relation to performance against the Indicators and the environmental objectives in the Environment Plan.
- R9.9 Develop a 5 year program to implement the Botany Wetlands Plan of Management to coincide with the Operating Licence term; further annual programs and timelines should be developed as a basis for future funding and KPI used to measure achievements.
- R9.10 Integrate its management of the Botany Wetlands into the broader activities of catchment management through, for example, direct links with appropriate Catchment Management Committees and using its expenditure and programs to leverage funding available through NSW and Commonwealth catchment and natural resource programs (eg National Heritage Trust).

10. DISPUTE RESOLUTION SCHEME

10.1 SUMMARY OF FINDINGS

Sydney Water obtained 'Partial compliance' for the requirements relating to the establishment, review and reporting on its internal complaints handling system. The introduction of the Works and Asset Management System (WAMS) as the main complaint recording system part way during the audit period limited the preparation of the required reports under the Operating Licence. The format of the reports did not comply with the Licence. For example, complaints are reported by local government area rather than suburb. Secondly, while the reports did not strictly comply, it is more important that the information be synthesised and presented in a form which indicates information is being used as a diagnostic tool to help identify systemic problems to guide strategic planning and future capital expenditure. As such, the unit of analysis may need to be a grouping other than suburb or local government. The impact of population size and area also needs to be considered in the interpretation of the complaint data. Furthermore, there should be an attempt by Sydney Water to integrate the complaint data with customer survey data to assess areas of discontent and identify mechanisms to overcome these problems.

It is important to monitor complainant's satisfaction with the process used to handle their complaints using the elements of AS4269-1995. While Sydney Water complied with a number of the Licence clauses under this section, Sydney Water's overall compliance was assessed as 'Partial compliance'.

Sydney Water obtained 'Full compliance' for the requirements relating to the establishment and function of the external (independent) dispute resolution scheme. Sydney Water provided a report summarising the outcomes of the external dispute resolution scheme and provides a useful assessment of the scheme. Involvement of the Energy and Water Ombudsman NSW (EWON) appears to be a positive mechanism to assist in resolving complaints. Outcomes of the 3 year review, presently being undertaken by EWON, needs to be considered as part of the next audit period. The auditor has reviewed the report prepared by Ageing Agendas as part of the 18 month review of the Energy Industry Ombudsman NSW (EION) (precursor to EWON) which, while giving an overall positive assessment, indicates that "in some cases, complainants were not satisfied with the perceived independence of the Scheme". It is for this reason that the auditor suggests an ongoing assessment of complainant satisfaction. Sydney Water has obtained 'Full compliance' for this section although two sub-components received a 'High compliance' rating.

Sydney Water obtained 'Full compliance' in handling Complaints to Other Bodies. The complaint received as part of the public submission to the audit was not being considered as a 'Complaint to Other Bodies'.

IPART requested a more detailed review of one particular complaint. EWON indicated that it had passed the complaint in question to the Minister's office and to the EPA and then had closed the matter. EWON had suggested that this complaint was outside its jurisdiction because of the amount of money that would be required to deal with the complaint. This particular clause in the EWON Constitution could represent a significant issue for the satisfactory handling of complaints that require significant capital expenditure. However, this complaint was not mentioned in the report to the Licence Regulator although it would appear the complaint in question was outside a strict interpretation of the clause as it was not before a court or tribunal.

10.2 SUMMARY OF REQUIREMENTS

Part 10 (Clause 10.2.1) of the Licence specifically requires the Auditor to report on:

- (o) the effectiveness of Sydney Water's internal dispute resolution scheme;
- (p) the effectiveness of Sydney Water's external dispute resolution scheme; and
- (q) complaints made to a Court or Tribunal.

These clauses refer to Part 12 of the Licence that sets the requirements for the Dispute Resolution Scheme adopted by Sydney Water. Specifically Part 12 includes:

12.1 - Internal dispute resolution process: This clause covers the process used by Sydney Water to receive, respond to and resolve complaints made by customers against Sydney Water.

12.2 - External dispute resolution process: If customers are unable to resolve complaints made to Sydney Water then a further process is in place to assist customers. The external dispute resolution scheme is therefore to be at arms length to the operations of Sydney Water.

12.3 - Complaints to other bodies: Customers may also lodge complaints with other bodies which also need to be reported to the Licence Regulator.

As well as the dispute resolution process there are Ministerial requirements which are also covered in this section. These include:

Ministerial Requirement 6: "...I expect the next audit to report a downward trend in odour complaints at these facilities" (referring to Glenfield and Riverstone sewage treatment plants)."

Ministerial Requirement 7: "...I require Sydney Water to develop appropriate measures for effective consultation in conjunction with Customer Councils and then enter into discussions with IPART to negotiate their adoption for audit purposes. I require negotiations with IPART to commence by the end of March 2001".

Ministerial Requirement 8: "...I require Sydney Water to develop and deploy guidelines and training in effective community consultation. I also require a report by 31 December 2000 on what mechanisms have been put in place to ensure effective community consultation."

10.3 DETAILS OF COMPLIANCE

Table 10.1: Dispute Resolution Scheme – Part 10 Licence Clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	NA	No requirement.
(o)	The effectiveness of Sydney Water's internal dispute resolution scheme under clause 12.1	No requirement	<p><i>There is no Compliance requirement against this clause as this clause requires an assessment of 'effectiveness' rather than 'compliance'.</i></p> <p>It was not possible to confidently provide an assessment of the effectiveness of the scheme for the audit period. The reporting system for the collection and analysis of internal complaints still requires significant integration of systems and simplification. To improve effectiveness, Sydney Water needs to consider preparing a single report that meets the requirements of the Operating Licence. See more detailed comments relating to the appropriate sub clauses under clause 12.1.</p>
(p)	The effectiveness of Sydney Water's external dispute resolution scheme under clause 12.2	No requirement	<p><i>There is no Compliance requirement against this clause as this clause requires an assessment of 'effectiveness' rather than 'compliance'.</i></p> <p>The external dispute resolution scheme appears effective and complies with the Operating Licence. The report (under Clause 12.2.9) summarising the outcomes of the external dispute resolution scheme provides a useful assessment of the scheme. Involvement of EWON appears to be a positive mechanism to assist in resolving complaints, however outcomes of the 3 year review presently being undertaken on EWON needs to be considered as part of the next audit. The auditor has based this view on information provided in the 18-month review of EION prepared by Ageing Agendas and presented in March 2000.</p>
(q)	Complaints made against Sydney Water to a court or tribunal under clause 12.3	No requirement	See comments in section 12.3, Table 10.2 .

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
12.1	Internal Dispute Resolution Process		
12.1.1	Sydney Water must establish internal complaints handling procedures for receiving, responding to and resolving complaints by Customers and Consumers against Sydney Water	Full Compliance	Procedures for collecting and resolving complaints have been sighted. The auditor visited the Liverpool Call Centre and discussed with staff the process and training associated with managing the Centre.
12.1.2	The internal complaints handling procedures of Sydney Water must be based on the Australian Standard AS4269-1995 Complaint Handling	Partial compliance	<p>Whilst procedures have been established to comply with AS4269-1995 from a Sydney Water perspective, there is no evidence that complainants perceive the procedures comply with the elements of AS4269-1995. A report prepared in June 2001 (Sydney Water Customer Complaints Policy and Procedure Review) identifies mechanisms to comply with the essential elements of the standard. Questions have been included in the emergency service survey to evaluate customer's perception about whether their call was handled according to the essential elements of the protocol. The results were not available for this audit.</p> <p>Ongoing surveys of complainants following resolution of their complaint would be useful in assessing compliance with AS4269-1995. The auditor reviewed the research report conducted in June-July 2000 titled "Customer Contact Satisfaction Surveys: Emergency Service Survey". This survey approach should be part of an ongoing program evaluating complainants while including questions to evaluate the elements associated with AS4269-1995.</p> <p>The auditor also reviewed the call centre general enquiries customer survey prepared for April-June 2000. This survey focussed on feedback from those customers calling Sydney Water's general enquiry number and with people making e-mail inquiries as such it was not targeted at complainants.</p> <p>It appears that complaints are not reported on a water system or sewage catchment basis but on a local government area basis. To assess systemic or recurring problems it would appear necessary to have standard reporting of complaints by a common grouping based around infrastructure systems, such as water system and/or sewage catchment. This fact, combined with the absence of customer perceptions to support the claim the scheme meets the requirements of AS4269-1995, has resulted in the auditor assessing this clause as 'Partial compliance'.</p>

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
			Adoption of the recommendations contained in the June 2001 report referred to above will serve as important steps in increasing compliance with this clause.
12.1.3	Sydney Water must make available to Customers and Consumers information concerning its internal complaints handling procedures which explains how to make a complaint and how the procedure works	Full compliance	Pamphlets have been produced and the procedures have been listed on the Sydney Water website.
12.1.4	Sydney Water must provide information of the nature described in clause 12.1.3 to Customers through their quarterly, or other, bills at least once annually	Full compliance	Pamphlets have been produced and a listing of the mail outs was sighted.
12.1.5	The Customer complaint handling, complaint resolution process and Customer redress provided to Customers under the Customer Contract must be reviewed and amended where necessary by Sydney Water to ensure that it is based on the Australian Standard AS2269-1995 Complaint Handling	Partial compliance	<p>The Sydney Water review dated June 2001 has been sighted, however there is still a need for a customer perspective. The procedure presented to IPART indicated that a customer/complaint satisfaction survey would be undertaken as part of the process. This would assist in the review process.</p> <p>Findings recorded for Clause 12.1.2 are also relevant for this clause.</p>
12.1.6	Sydney Water must report each year to the Licence Regulator as part of the Annual Audit on the following details concerning complaints made against Sydney Water which are handled by its internal complaints handling process:	Partial compliance	<p>A report providing details of complaints recorded from January to June 2001 was provided to the auditor. It appears that changes in systems (vis:- the integration of Hydra and WAMS together with the Electronic Complaint System (ECS) and the Billing System (ACCESS), have made the reporting of the full year of complaints difficult, particularly as WAMS has been operating since December 2000.</p> <p>While information is being collected according to a predetermined protocol, the Auditor has not been able to receive a clear overall report that aligns with the requirements of the Licence.</p> <p>It appears all contacts and complaints are entered into the system through the various call centres and are processed according to predetermined routines. While Sydney Water has provided explanations about the reasons for not providing the specified reports, the auditor has to provide a compliance evaluation against the requirement of the Operating Licence.</p>

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
12.1.6(a)	The number and type of complaints received on a month by month basis, classified by Suburb into one or more of the following categories: 1. Water quality including health and aesthetic parameters; 2. Continuity of water supply; 3. Water pressure; 4. Sewage odour; 5. Sewage overflow; 6. Stormwater and drainage services; and 7. Billing including availability charges payable under the Act.	Partial compliance	Sydney Water provided a report of complaints by Local Government Area. This does not conform to the requirements of the Operating Licence. Monthly reports were provided for the specified categories for the months January to June 2001 using WAMS, ECS and ACCESS. Sydney Water assured the auditor that reports can be produced for the months of 2000 “the process is extremely costly and time consuming and is of limited value for business improvement purposes”. Samples of the reports by suburb were tabled at the audit interview, however the various data capturing systems did not provide the necessary simple reporting systems. As a result, the auditor rated Sydney Water as partially complying. Confirming the reporting requirements between Sydney Water and the Licence Regulator, if different from the present Operating Licence, will need to be a high priority for the mid-term review.
12.1.6(b)	The number and type of complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be; and	Partial compliance	Complaint management reports were provided for the months January to December 2000 and included: Customer Contacts Report; Customer Complaints Report; Complaints Investigation Report; Complaints Resolution Performance (age of complaints); and Complaints Resolution Method. While data for complaints resolved/unresolved and ageing of complaints for the period January 2001 to June 2001 were provided the above reports for this period were not. There was no analysis of why complaints were not resolved. There was limited information that provides insight into how well complaints were resolved during the audit period. However, a report, “Customer Contact Satisfaction Surveys: Emergency Services Survey” had been prepared previously which provides a valuable insight. In July 2001 a report called “Community Views on Drinking Water Quality” assesses customer’s views on water quality and evaluates differences between the general community and people who had complained about water quality. As a result the auditor rated Sydney Water as partially complying.
12.1.6(c)	Any problems of a systemic nature arising from the complaints	Partial compliance	Sydney Water did not provide any specific report that identifies and addresses problems of a systemic nature. The “12 month rolling average” Customer Complaint Resolution data indicates Sewage Overflow, Accounts/Rating/Billing and Water Continuity are the major complaint categories although it appears to be only based on data collected from January 2001. Analysis of the data by suburb does not allow great insight into systemic issues primarily because of

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
			the potential impact of property numbers/density. It would be expected that more densely settled areas with more properties and people would be likely to generate more complaints. Therefore investigations should be made into standardising complaint data by population or property. Furthermore unless local government areas or suburbs correlate with infrastructure systems (such as sewage catchment or water supply systems) it will be unlikely to prove a useful diagnostic tool.
12.2	External Dispute Resolution Scheme		
12.2.1	Within 1 month after the Commencement Date, Sydney Water must establish a Dispute Resolution Scheme for the resolution by a Dispute Resolution Body of disputes between Sydney Water and its Customers and between Sydney Water and Consumers of the nature described in 12.2.3	Full compliance	Sydney Water joined EION that then became EWON. Sydney Water has been a member of the EWON scheme since the 1 January 2000.
12.2.2	The Dispute Resolution Scheme so established by Sydney Water is subject to the Minister's approval	Full compliance	The scheme and Sydney Water's participation in the scheme was launched by the Minister.
12.2.3	The Dispute Resolution Body is to hear disputes relating to complaints made by Customers and Consumers in relation to the following issues: a) Water quality, including health and aesthetic parameters; b) Continuity of water supply; c) Water pressure; d) Sewage odour; e) Sewage overflow; f) Stormwater and drainage services; and g) Billing, including availability charges payable under the Act	Full compliance	Sydney Water provided a report from data provided by EWON that describes the various disputes handled in the specified categories.

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
12.2.4	The Dispute Resolution Scheme must comply with the minimum standards, so far as applicable, specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes released by the Commonwealth Minister for Customs and Consumer Affairs in August 1997	Full compliance	<p>Contact was made with EWON who confirmed that it is presently undergoing its independent 3 year review which includes assessing compliance with the minimum standards specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes. The results of this review are not presently available.</p> <p>EWON had previously undergone an internal 18-month review and Ms Clare Petre from EWON has indicated that it meets the minimum standards specified. The auditor reviewed the report prepared in March 2000 by Ageing Agendas called "Review of the Energy Industry Ombudsman Scheme of NSW" and concluded that the scheme performed well against the benchmarks. The report suggested areas for reform that will need to be assessed in the next review. A copy of the EWON 3-year review, presently under way, should be assessed in the next audit period. Sydney Water should also consider undertaking their own "due diligence" to ensure that EWON is complying with Sydney Water's requirements under Sydney Water's Licence.</p>
12.2.5	The Dispute Resolution Scheme must have the following features:		
12.2.5(a)	The decision making process of the Dispute Resolution Body and administration of the scheme is to be independent from Sydney Water and subsidiaries of Sydney Water	Full compliance	The Articles/Constitution of EWON Limited has been reviewed to assess the independence of the scheme. While Sydney Water sits on the Board of EWON and therefore has influence over the decisions of the Board, the constitution requires the appointment of an independent Ombudsman and a Council of 8 people plus an independent Chairperson. Of the 8 people, 4 are to represent the interests of domestic and small business consumers of energy and water services, while 4 represent the interests of the members of EWON. The Board can only terminate the appointment of the Ombudsman on the recommendation of the Council. This arrangement provides the necessary independence between Sydney Water and the scheme.
12.2.5(b)	Sydney Water agrees to abide by the decisions of the Dispute Resolution Body in relation to disputes referred to it for resolution	Full compliance	In becoming a member of EWON Ltd, Sydney Water has agreed "to be bound by and observe the terms of the Constitution" (Clause 11.8.2 (a)) and Clause 6.2 provides "All decisions by the Ombudsman under paragraph 6.1 shall be automatically binding upon members."
12.2.5(c)	The Dispute Resolution Scheme must adopt informal proceedings which discourage a legalistic adversarial approach	Full compliance	The report prepared by Sydney Water identified the process used to obtain resolution of the disputes to comply with this requirement. An assessment of the 3-year review of EWON with a particular focus on the comments of customers who have gone through the process should be part of the next

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
			audit.
12.2.5(d)	Decisions of the Dispute Resolution Body should be fair and seen to be fair, by observing the principles of procedural fairness, by making its decisions based upon the information before it and by having specific criteria upon which its decisions are based	High compliance	<p>Minutes of the Council of EWON have been sighted which refer to the terms of reference of a 3 year review to be conducted from 1 July 2001. Outcomes of an internal review undertaken in early 2000 recommended that a periodic survey of complainants be undertaken to determine the nature of their experience with members and to identify any changes necessary in procedures to avoid discouraging complainants. EWON indicates that a survey of complainants was undertaken for the first review and a second and more comprehensive survey is under way. A review of the first draft of the terms of reference for this review, provided by Sydney Water, refers to “inquire into and report on the perceptions of stakeholders in the ombudsman scheme”. Discussions with EWON indicate that this will also include complainants. While the 18-month review of EION indicated that most cases see the scheme as fair there were instances for which this was not the case. The results of surveys of complainants indicating that participants see the process as fair would need to be viewed for the next audit to obtain an increased compliance rating.</p> <p>The response to an advertisement placed by IPART for input into the audit, indicates that at least one complainant is still not satisfied with the outcomes obtained through this process. EWON indicated this complaint was outside their jurisdiction because the cost required to rectify the complaint was above their jurisdictional limits. This represents a potential flaw within the complaint handling system if complaints can be forwarded to EWON by Sydney Water and the complaints are then closed because they are outside EWON's jurisdiction.</p> <p>Refer to Appendix J for a description of the Public Submission received in response to the IPART advertisement.</p>
12.2.5(e)	The Dispute Resolution Scheme is to operate efficiently by keeping track of disputes referred to it, ensuring complaints are dealt with by the appropriate process and by the Dispute Resolution Body regularly reviewing the operation of the Dispute Resolution Scheme	High compliance	<p>An internal review of what was then EION was undertaken in late 1999 early 2000 with a further review to be undertaken of EWON in later 2001. The draft terms of reference have been sighted for this later review although the results have not been viewed. The results of this review should be considered in the next audit period. The review prepared by Ageing Agendas indicated some areas for reform. The completion of these reforms in the next review would be required to obtain a higher compliance rating.</p> <p>The summary report prepared by Sydney Water on complaints made to EWON suggests that the</p>

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
			<p>scheme tracks the disputes appropriately.</p> <p>The recommendations of the first internal review of EION suggest a number of measures to improve efficiency and effectiveness and, as a result, the auditor has assessed this clause as 'High compliance'. The next audit should review recommendations and outcomes of the second review of EWON. Full compliance would be attained if the review indicates that EWON is operating efficiently.</p>
12.2.5(f)	The Dispute Resolution Scheme is to be free of cost to Customers and Consumers and is to be funded by Sydney Water	Full compliance	Sydney Water contributes to the operation of EWON. A copy of an invoice sent to Sydney Water as part of its payment to the cost of operating EWON has been sighted. The scheme is funded by all members of EWON Ltd according to the Constitution although contributions are proportional to the amount member's customers use the scheme.
12.2.6	Sydney Water must prepare a pamphlet that explains how the Dispute Resolution Scheme operates and how it can be accessed	Full compliance	Sydney Water provided a copy of the pamphlet produced.
12.2.7	Sydney Water must provide the pamphlet to Customers through their quarterly or other bills, at least once annually	Full compliance	A table of Sydney Water's mailing schedule for various inclusions with bills was provided.
12.2.8	Sydney Water must provide the Licence Regulator with written reports of the determination made by the Dispute Resolution Body based on information reasonably obtained from the Dispute Resolution Body. Where considered appropriate by Sydney Water and the Dispute Resolution Body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports	No requirement	As there were no cases deemed to have specific determinations, no report was prepared.
12.2.9	Sydney Water must produce a yearly report to the Licence Regulator based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. The report must	Full compliance	Sydney Water has prepared a report with compliance ratings provided for each of the following sub clauses.

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
	contain the following information:		
12.2.9(a)	How the scheme works	Full compliance	Included in Report.
12.2.9(b)	<p>The number and types of complaints received by the Dispute Resolution Body, classified by Suburb into one or more of the following categories:</p> <ol style="list-style-type: none"> 1. Water quality including health and aesthetic parameters 2. Continuity of water supply 3. Water pressure 4. Sewage odour 5. Sewage overflow 6. Stormwater and drainage services 7. Customer billing, including availability charges payable under the Act 	Full compliance	<p>The report provided by Sydney Water meets all the requirements of the sub-clause. The suburbs with the highest number of complaints are Katoomba and Picton (7 complaints each) and Kellyville (6 complaints) however this could be impacted by population and/or property density. As with the reporting of internal complaints it would appear that a better unit of analysis might be the infrastructure systems that generate the complaints. Water systems or sewage subcatchments may be better reporting criteria to allow assessment of the underlying causes of problems.</p> <p>The two categories generating the majority of the complaints are customer billing and customer service.</p>
12.2.9(c)	The outcome of these complaints	Full compliance	The outcomes of the contacts with EWON are reported. They appear to be ordered by date of completion although it would be easier if they were ordered by "Matter Number" to more easily track a particular complaint outcome.
12.2.9(d)	The time taken to resolve complaints	Full compliance	Included in Report.
12.2.9(e)	The procedure for resolving complaints	Full compliance	Included in Report.
12.2.9(f)	Any problems of a systemic nature arising from the complaints	Full compliance	Sydney Water has provided an assessment of the key complaint generating categories and a general comment about Sydney Water response to these concerns. Functional issues associated with how Sydney Water operates can cause systemic problems or it could relate to infrastructure issues such as the age of pipes or location of STPs. While functional issues can be assessed to some degree through the complaint categories, the causes of other infrastructure related issues are more difficult to assess. Sydney Water should provide more detail in their plans to reduce complaints in specific areas.

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
			As EWON complaints/contacts are escalated complaints from Sydney Water Internal complaint handling system, they do not provide the quantity of complaints to provide an effective analysis as that which is available from internal complaints.
12.2.9(g)	Any other relevant information required by the Licence Regulator to be included in the report	No requirement	<p>The Licence Regulator has not identified any further requirements. However as mentioned previously, one issue was raised through public submissions to IPART as part of the audit which had been dealt with by Sydney Water and EWON. EWON made a determination that they did not have the authority to award sufficient compensation or direct Sydney Water to undertake a capital expenditure program to satisfy the Customer. EWON therefore resolved that further investigation was not warranted although it referred the complainant back to the Minister's office at the Customer's request. Apparently, the Customer has also taken up the issue with the EPA and the NSW Ombudsman.</p> <p>This issue would not have been investigated unless the submission had been received. This suggests that the EWON report could be fine tuned to provide:</p> <ul style="list-style-type: none"> • a listing of any complaints which are still outstanding at the end of the audit period; and • a listing of any contacts/complaints which have been referred to other bodies during the year.
12.2.10	The report referred to in clause 12.2.9 is to be made available to the public free of charge	Full compliance	Sydney Water indicated that the report would be made available to the public free of charge.
12.3	Complaints to Other Bodies		
12.3	Sydney Water must report to the Licence Regulator by no later than 1 September each year (for consideration and reporting by the Licence Regulator as part of the annual audit) on complaints made against Sydney Water to a court or tribunal, such as the Fair Trading Tribunal, (based on information available from these bodies and Sydney Water itself as a party to the	Full compliance	<p>Sydney Water sent a letter to the Licence Regulator on 31 August 2000 indicating that there were two matters before the Fair Trading Tribunal. The letter indicated that both cases related to service availability charges levied by Sydney Water.</p> <p>Subsequently an e-mail was sent to the Licence Regulator on 3 September 2001 by Sydney Water with the outcomes of these cases. These two matters were determined in November 2000.</p>

Table 10.2: Dispute Resolution Scheme – Part 12 Licence Clauses

Clause	Requirement	Compliance	Findings
	complaint) containing the following details		Sydney Water reported to the Licence Regulator on 31 August 2001 that there were no matters considered by the Tribunal for the year 2000/01.
12.3(a)	The number and types of complaints received by such other bodies	Full compliance	Letters sent to the Licence Regulator are considered to be the report.
12.3(b)	The outcome of complaints	Full compliance	As above
12.3(c)	How the complaints were resolved	Full compliance	As above
12.3(d)	Any problems of a systemic nature arising from the complaints	No requirement	
12.3(e)	Any other relevant information required by the Licence Regulator to be included in the annual report	No requirement	As indicated above, one complaint was raised through a submission to IPART as part of the request for public submissions. This complaint involved submissions by a property owner about flooding occurring on his property due to restrictions in the stormwater infrastructure downstream of his property. This complaint has apparently been placed before the Minister's office and also the NSW Ombudsman however such bodies are outside the strict definition of this clause.

Table 10.3: Dispute Resolution Scheme - Ministerial Directives

ID	Requirement	Compliance	Findings
M6	"...I expect the next audit to report a downward trend in odour complaints at these facilities (Glenfield and Riverstone sewage treatment plants)"	Full Compliance	<p>Sydney Water provided reports on the number of odour complaints recorded against Glenfield and Riverstone sewage treatment plants. These reports indicated fewer complaints made during the 2000/01 year compared to the previous year.</p> <p>The Auditor reviewed trend information on complaints for these two STPs. While complaints about Riverstone STP had increased steadily from 1996/97 (2) to 1999/2000 (39) actions taken by Sydney Water had reduced complaints to 5 for 2000/01. The minutes of the community working party (17 September 2001) also record that "no further formal meetings be convened unless requested as the odour issues have been significantly addressed."</p> <p>Trend information on Glenfield is more variable as the number of complaints received in 2000/01 (21) is less than 1999/00 (32) however it is the same as 1997/98 (21). The Auditor has sighted information regarding the commissioning of odour scrubbers during the audit period which should reduce complaints about odours. The number of complaints for both STPs should be reviewed at the next audit to ensure that the reduction in complaints is maintained.</p>
M7	"...I require Sydney Water to develop appropriate measures for effective consultation in conjunction with Customer Councils and then enter into discussions with IPART to negotiate their adoption for audit purposes. I require negotiations with IPART to commence by the end of March 2001"	Full compliance	<p>A letter was sent to the Licence Regulator on 28 March 2001 by Sydney Water with an attached discussion paper outlining proposed measures for effective consultation with its Customer Councils. The Licence Regulator responded indicating general concurrence with the measures proposed and to confirm that staff from the Licence Regulator and Sydney Water had met by the end of March 2001 (15 March 2001).</p> <p>While these measures have been progressively implemented during 2001, further work needs to be undertaken in deciding how the Councils can be more effective in their consultation role.</p>
M8	"...I require Sydney Water to develop and deploy guidelines and training in effective community consultation. I also require a report by 31 December 2000 on what mechanisms have been put in place to ensure effective community consultation."	High compliance	<p>Sydney Water is implementing policy guidelines and training with respect to community consultation. A number of memos to the Minister's office concerning the progress on this requirement were sighted. While they refer to agreement by the Minister's office to an extended term on this issue no other evidence of Ministerial agreement was noted although it was requested in the Sydney Water Memo of 4 December 2000. The auditor therefore rated Sydney Water to have a high level of compliance with the Minister's requirement. A copy of the Sydney Water community consultation project plan was attached to the above memo.</p>

Table 10.3: Dispute Resolution Scheme - Ministerial Directives

ID	Requirement	Compliance	Findings
			<p>The Auditor notes that the Community Consultation Policy and Guidelines were presented to the Sydney Water Board meeting of 20 June 2001.</p> <p>As this process was being rolled out at the end of the 2000/01-audit period, it is suggested that this requirement should be a subject for a further review for the 2001/02-audit period.</p> <p>A key area to be further investigated is the monitoring and reporting of the effectiveness of the community consultation process. While the policy and guidelines address the issue of evaluation and feedback it is not clear how this information will be reported, at an organisational level, to evaluate the effectiveness of the Sydney Water community consultation process. It is suggested that an annual report record the key measures used by Sydney Water to achieve effective community consultation.</p>

10.4 DISCUSSION

10.4.1 Internal Dispute Resolution Process

Sydney Water has an extensive system of collecting complaint information and it is described in detail in the Sydney Water Customer Complaints Procedure (No D RAD 0001 N.0004). The process requires the incorporation of a number of data recording systems including ECS, WAMS and ACCESS.

WAMS was introduced on 3 December 2000 and is said to more accurately record complaint data. However because WAMS is the system that deals with service difficulties and faults not all complaints are referred through this system. Furthermore under WAMS not all contacts are recorded as complaints. A list of categories was provided to the auditor in which Sydney Water have classified into either complaints on non complaints. WAMS has only been operating for 7 months of the audit period, and reports were only generated for this period. It also appears that some programming bugs exist within the system as evidenced by the accumulation of complaints classified as unresolved in the 50+ day category for each following month.

The two other complaint-recording systems (ECS and ACCESS) are expected to be replaced by the Customer Information and Billing System (CIBS) in June 2002. CIBS has been mentioned in previous audit reports including Minister's requirements. While this system is being developed and is soon to be implemented, it would appear counterproductive to further develop the linkages between the three existing systems.

As the Operating Licence requires a report to be produced with characteristics as described in Clause 12.1.6 the level of compliance needs to be assessed relative to this requirement. While Sydney Water report they felt it would be acceptable to report complaints by local government area such reports do not comply with the requirements of the licence. Any variation to the requirements under the licence needs to be undertaken in accordance with section 2.5 of the Operating Licence.

10.4.2 External Dispute Resolution Scheme

The Energy and Water Ombudsman NSW (EWON) scheme has been adopted by Sydney Water as the mechanism through which its customers can obtain an external and independent review of any complaint. The auditor has relied heavily on material provided by Sydney Water as a member of EWON although to undertake a full review of some clauses under this section would require more detailed investigations of EWON. It is suggested that the review process incorporated in the EWON structure is used as a surrogate for exploring compliance in this area of the Operating Licence.

The operation of the scheme appears to meet all the requirements of the Operating Licence although future audits will need to assess internal and external reviews undertaken on EWON. It is suggested that Sydney Water request an Annual Report from EWON that addresses the relevant clauses in the Sydney Water Operating Licence such as 12.2.4 and 12.2.5.

One area that does limit the scheme is that the Ombudsman can only resolve complaints in which the determination does not exceed a value of \$20,000, or with the consent of the member can go up to \$50,000. Issues that may have higher cost implications to the member are outside the jurisdiction of EWON.

10.4.3 Complaints to Other Bodies

There were only two complaints to other bodies that were outstanding at the end of the previous audit period and subject of communication between Sydney Water and the Licence Regulator in August 2000. These two complaints were resolved by November 2000. Sydney Water indicated that there were no other complaints outstanding at the end of 2000/01.

10.5 FACTORS AFFECTING COMPLIANCE

10.5.1 Internal Dispute Resolution Process

As previously mentioned, the two key factors impacting on compliance under the Licence were the reporting of complaints by suburb and the introduction of new information management systems.

The introduction of WAMS in December 2000 has meant that a full year's data has not been collected under the system. This has meant that a number of reports provided to the auditor report the last 6 months of the audit period. It also appears that the newness of the system is reflected in the ability to generate reports and graphs. As previously mentioned, the ageing of complaints in one set of reports appeared to accumulate all complaints into the 50+ day category over time (this was pointed out by Sydney Water personnel and they indicated they were working on the problem), while October 2000 graphs in the Customer Contact Report is repeated in the December 2000 Contact Report. These may well be problems associated with the new system however it is an area that should receive attention over the next year.

While the Operating Licence requires reporting by suburb Sydney Water informed the auditor that while such a report could be produced they believed they could report by local government area. The auditor has assessed compliance against the requirement of the Licence and suggests that if any change is to be made it needs to be formalised and the Licence amended.

The reports provided in their raw form do not exhibit the level of analysis and interpretation that would help Sydney Water identify problem areas on which it can act, particularly with respect to infrastructure issues. The key reason for collecting this type of information, aside from performance review, is to use the data as a diagnostic tool to guide future customer service and capital expenditure decisions. The reports prepared to comply with this section therefore need to exhibit a greater level of analysis and interpretation of the information. While not required under the present Licence, it would also seem that greater integration could occur between the complaint information and the customer survey information.

The report prepared by Sydney Water on EWON complaints may serve as a useful model in further developing the reporting format for this section. If such a model was adopted further detailed analysis of the causes of the complaints and the reporting of mechanisms to address these concerns would demonstrate the integration of the information into the decision making process of Sydney Water. For example, the complaint resolution category "fault rectification/service restoration" which describes 80% of the actions seems too broad to provide much meaning. Greater interpretation would better demonstrate that Sydney Water has identified any systemic problems within its system and the mechanisms it intends to use to address them.

While suburbs have been identified as the unit of analysis in the Licence and Sydney Water has reported by local government area the results in their raw form can be misleading in that it would be expected that areas of higher population and/or properties may generate more complaints. Large local government areas or suburbs would be expected to generate more complaints than small ones. Standardising complaint data using location and population variables may therefore provide greater insight into relative problems between areas.

Complaints by suburbs or local government areas may also provide misleading information if infrastructure boundaries (water systems, sewage catchments) cut across these suburban or local government boundaries thereby splitting complaints across systems. It appears that the appropriate units of analysis should be those that make sense in managing the water and sewage system.

10.5.2 External Dispute Resolution Scheme

The key issue that impacts on the compliance of Sydney Water with this clause is the assessment of complainants with the process followed by EWON. It has been proposed that EWON will undertake surveys of complainants to assess satisfaction with the review process to resolve the complaint as part of

the assessment of EWON itself. Such a review process should be part of a program of continual improvement for EWON and Sydney Water as a member of this scheme.

In the absence of an independent assessment of the complainant's satisfaction with the process used by EWON the auditor has deemed that Sydney Water has a high level of compliance with the relevant clauses. However, assessment of the 3-year review of EWON during the next Sydney Water audit period should serve as an important component of evaluating Sydney Water's compliance with clause 12.2. As Sydney Water is relying on EWON to satisfy the requirements of Sydney Water's Operating Licence, it will be important that EWON's approach satisfy the requirements of the Licence and that Sydney Water has undertaken the necessary due diligence to be assured that this is the case prior to the audit.

10.5.3 Complaints to Other Bodies

The complaint raised as a result of the public submission process for the audit and which appears to have been forwarded to the Minister's office and the EPA, was not mentioned by Sydney Water in its report to the Licence Regulator. Presumably this was because it was determined to be outside the strict requirement of clause 12.3 in that it refers to complaints to a court or tribunal. As a result the auditor has deemed the Sydney Water as complying with this clause. However if the intent of this clause is broader in scope and refers to bodies 'outside courts and tribunals', then Sydney Water would have been assessed as not complying.

10.6 RECOMMENDATIONS

10.6.1 Key Recommendations

Key recommendations are presented by the auditor to address critical performance or compliance issues.

It is recommended that Sydney Water:

- R12.1 Undertake a sample survey of complainants in regard to its internal dispute resolution process, on a regular basis to assess customer satisfaction with the process used to resolve their complaint. The survey should pay particular attention to an assessment against the key elements of AS 4269-1995.
- R12.2 Implement recommendations contained in the Sydney Water report dated June 2001 (*Sydney Water Customer Complaints Policy and Procedure Review*) regarding internal dispute resolution.
- R12.3 Determine and report upon the internal dispute resolution scheme including:
- disputes by relevant water and/or sewerage systems by suburb, to allow assessment of problems of a systemic nature;
 - problems of a systemic nature which are identified by the complaint data and the response to be undertaken by Sydney Water;
 - the impact of population and/or property density on complaint reporting;
 - any amendments needed in the Operating Licence to reflect the appropriate geographic unit (as indicated above) for analysis and reporting; and
 - a summary report on any complaints older than 50 days that are unresolved at the 30th June each year.
- R12.4 Request an annual report from EWON that covers:
- an analysis of complaints by infrastructure system (such as water systems or sewage catchment) for consideration as part of the annual audit of Sydney Water;
 - any complaints/contacts that have been referred to any other bodies, for consideration as part of the annual audit of Sydney Water;
 - any complaints considered outside the EWON jurisdiction because of the financial restrictions in the EWON constitution;
 - any complaints/contacts that are still being considered by EWON as of 30 June for consideration as part of the annual audit of Sydney Water; and
 - any issues relevant to the specific clauses of the Sydney Water Operating Licence regarding dispute resolution (such as 12.2.4 and 12.2.5).

10.6.2 Secondary Recommendations

Secondary recommendations are presented by the auditor to encourage Sydney Water to improve overall performance and compliance.

It is recommended that Sydney Water:

- R12.5 Integrate complaint data and customer survey data through the development of a sample frame for the annual customer surveys that can be analysed in units similar to the key complaint units
- R12.6 Ensure that the Customer Information and Billing Service (CIBS) is integrated into the complaint handling system to provide the required management and performance reports necessary to identify any systemic weaknesses highlighted by customer complaints.
- R12.7 Undertake a sample survey of complainants in regard to its external dispute resolution process on a regular basis to assess customer satisfaction with the process used to resolve their complaint.
- R12.8 Assess the 3-year review of EWON in relation to its impact on the relevant clauses of the Operating Licence.
- R12.9 Continue to monitor the number of odour complaints related to Glenfield and Riverstone STPs in accordance with the Ministerial Directive to ensure the reduction in complaints is maintained.
- R12.10 Report on the effectiveness of the community consultation process implemented by Sydney Water as result of the Minister's directive.

APPENDIX A
DETAILED AUDIT BRIEF



INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

I N V I T A T I O N T O T E N D E R

SYDNEY WATER CORPORATION - 2000/01 OPERATIONAL AUDIT

1 BACKGROUND

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) is seeking suitably qualified consultants to conduct an audit of Sydney Water Corporation's (Sydney Water's) performance against its Operating Licence.

Sydney Water is a State Owned Corporation which is wholly owned by the NSW Government. The Corporation provides water, sewerage and some stormwater drainage services to about 4 million customers within the areas of Sydney, the Blue Mountains and Illawarra regions.

In accordance with the *Sydney Water Act 1994*, an Operating Licence was granted to Sydney Water by the NSW Government in 1995. At the end of 1999, the Tribunal recommended to the government terms and conditions to amend the Operating Licence for Sydney Water. The Licence was renewed on 12 April 2000 for a 5 year term. A copy of the current Operating Licence can be found at Attachment 3.

The Operating Licence

- allows Sydney Water to provide services in its area of operations
- sets out minimum performance standards for the Corporation
- contains protection mechanisms for consumers of Sydney Water's services.

IPART was established in 1992 to regulate pricing of monopoly services. In November 2000, the Government transferred Licence auditing and other regulatory responsibilities for the 3 metropolitan water authorities (Sydney Water, Hunter Water and the Sydney Catchment Authority) to the Tribunal. These regulatory functions were previously carried out by a statutory body known as the Licence Regulator.

The Audit is used by the Tribunal as the basis for its report on Sydney Water's performance and its recommendations to the Minister for Energy (the Minister responsible for Sydney Water).

2 OBJECTIVES OF CONSULTANCY

The objective of the audit is to advise and report to the Tribunal on Sydney Water's performance against its Operating Licence for the period 1 January 2000 to 30 June 2001. Since the Operating Licence was amended on 12 April 2000, the audit will need to consider both the original and amended Licences.

The Tribunal will invite public submissions on Sydney Water's performance. These submissions will be forwarded to the auditor for consideration.

In preparing its report the auditor must:

1. review and assess the level of compliance (or progress) achieved by Sydney Water against the Operating Licence requirements set out in Attachment 1
2. assess and report on progress by the Corporation in implementing the Ministerial Requirements arising from the 1999 Operational Audit of Sydney Water (these items are set out in Attachment 2)
3. identify any factors that have affected the performance for the period from 1 January 2000 to 30 June 2001
4. identify any factors that could impact on Sydney Water achieving the performance requirements of the Operating Licence in the future
5. based upon the audit assessment, make recommendations on how Sydney Water can improve its performance in the future
6. consult with Sydney Water's regulators (EPA, NSW Health and the Department of Land and Water Conservation) and other stakeholders, as appropriate.

The auditor will be responsible for assessing and interpreting the audit requirements and ensuring that the audit process satisfies all statutory requirements.

Outputs

The main outputs from the Audit are:

- two draft reports and a final written report addressing the objectives of the consultancy;
- discussions and meetings with the Tribunal and/or the Tribunal Secretariat
- presentations to the Tribunal and/or Tribunal Secretariat which outline the major issues and findings.

The final written report should be provided in 7 bound copies and 1 loose-leaf copy, as well as in PDF format suitable for web publication.

The auditor should note that the final report will be tabled in Parliament by Sydney Water's portfolio Minister and, as such, will become a public document. As such the report should be clearly and logically set out and written in plain English, avoiding the use of unnecessary technical language.

On completion of the audit, the auditor's reports, working papers and advice provided to the Tribunal will become the property of the Tribunal.

3 CONDITIONS OF TENDER

3.1 Timing

The successful tenderer must be able to meet the following work schedule:

CONTRACT PROGRAM		
Month	Date	Activity
September	Mon 3	Start of contract
October	Mon 22	Delivery of first draft Audit Report (First milestone)
	Fri 26	Discussion of first draft with Tribunal and /or Secretariat
November	Mon 19	Delivery of second draft Audit Report (Second milestone)
	Fri 23*	Discussion of second draft with Tribunal and/or Secretariat
December	Mon 3	Delivery of final Audit Report (Third milestone)
	Fri 7*	Discussion of final Audit Report with Tribunal and/or Secretariat (if required)
		End of Contract

*Indicative dates – subject to negotiation between the Tribunal Secretariat and auditor.

Formal written progress updates will be required from the consultant on a weekly basis. Progress meetings in addition to those in the above program are expected. The detailed consultancy work plan should reflect these.

3.2 Fee

The fee quoted is to be inclusive of all costs including Goods and Services Tax, incidental expenses and disbursements. Payments will be due within 28 days of receiving an invoice as per an agreed payment schedule. The consultant may wish to outline a draft payment schedule.

A detailed breakdown of the consultancy is required with the proposal. The proposal should include estimates of the time required for the project, auditors to be involved in the project, their rates, and a total fee estimate. Staff costs should be clearly reconciled to the detailed work plan.

The auditor should allow for presentations to the Tribunal, discussion and meetings with the Tribunal Secretariat, and stakeholder meetings as required.

3.3 Proposal

The consultancy proposal should demonstrate an appreciation for the task and describe the approach intended to achieve it. A list of personnel to be involved in the audit should be listed, together with brief resumes detailing relevant experience. A detailed work plan is also required. Details of previous clients who can be contacted are also desirable.

3.4 Presentation

Shortlisted tenderers will be required to make a presentation on their proposal as part of the tender evaluation process.

3.5 Criteria for selection

In selecting the successful consultant the Tribunal may consider any relevant matter including:

- understanding and expertise in the areas covered by the Operating Licence (ie. water quality, system performance standards, customer service and environmental measures)
- knowledge of water and sewerage businesses
- experience in similar projects
- understanding of Sydney Water's regulatory framework
- proposed consultancy fee
- proposed audit and quality assurance procedures
- adequate resourcing and ability to provide results within the stated time frame
- guaranteed availability of key staff
- demonstrated ability to enlist the agency's cooperation while encouraging an acceptance of the audit outcomes

The successful tenderer will be able to assemble an audit team with specific expertise and experience in each of the core auditable areas (water quality, system performance standards, customer service and environmental measures). These details should be included in the proposal.

In the past, many water utilities have paid more attention to the engineering aspects of their business than to customer management. The Tribunal regards the customer management aspects of the Audit as particularly important given the size and diversity of the Corporation's customer base and the monopoly nature its operations. The current audit, therefore, requires equal levels of expertise in consumer issues, engineering and environmental disciplines. Tenderers may consider forming consortia or contracting specialist consultants to achieve this balance of skills.

3.6 Acceptance of Tender

The Tribunal reserves the right to:

- accept no tender at all
- postpone indefinitely the acceptance of a tender
- call for new tenders
- appoint one or more tenderers to undertake the review
- approve or reject any sub-contractors the tenderer may wish to appoint.

3.7 Consultancy Contract

The successful tenderer will be obliged to enter into a contract with the Tribunal prior to commencing the Audit. The Tribunal's consultancy contract covers issues including, but not limited to:

- consultancy information and documentation
- ownership of intellectual property
- conflicts of interest
- confidentiality
- insurance.

The Tribunal reserves the right to modify contract terms for the final contract as it considers appropriate. A copy of the Tribunal's draft contract is available on request.

4 PARTIES TO THE AUDIT

The party managing and commissioning the Audit is the Independent Pricing and Regulatory Tribunal of New South Wales. The primary contact at the Tribunal is:

Mr Bob Burford tel: 61-2-9290-8408
e-mail: bob_burford@ipart.nsw.gov.au

5 LODGEMENT OF TENDER

Three bound copies and 1 loose-leaf copy of the tender should be lodged in a sealed envelope marked

'2000/01 SYDNEY WATER OPERATIONAL AUDIT'

addressed to: Ms Meryl McCracken
 General Manager, Support Services
 Independent Pricing and Regulatory Tribunal of NSW

at PO Box Q290
 QVB POST OFFICE NSW 1230

or Level 2
 44 Market Street
 SYDNEY NSW 2000

The tender should be received at the Tribunal's office no later than 5.00 pm Sydney time, on Wednesday 1 August 2001.

ATTACHMENT 1 – COMPLIANCE AUDIT SPECIFICATIONS

The basic audit requirements are prescribed in Section 10.2 of the Sydney Water Operating Licence. The auditor is to assess compliance with these specifications and ensure that the audit process satisfies all statutory obligations. Key aspects of this section is summarised below, but the auditor is referred to the Act and the Operating Licence to determine the full context. In auditing the requirements set out below, the auditor must also:

- Identify any factors that have affected the performance for the period 1 January 2000 to 30 June 2001
- Identify any factors that could impact on the achievement of Operating Licence requirements in the future
- Make recommendations on how Sydney Water can improve its performance in the future

Operating Licence Reference	Additional Comments
10.2 (a) Customer contract performance (Operating Licence Schedule 1)	<p>The Customer Contract includes the following requirements:</p> <ul style="list-style-type: none"> • Water supply (clause 1.1) and sewerage supply (clause 2.1), water quality (clause 1.3). • Recycled water (clause 1.4). • Pressure system performance standard (clause 1.5). • Rebates (clauses 1.6, 2.2, 6.2, 6.4). • Trade waste (clause 2.3). • Trunk Drainage (clause 2.4). • Timely response to requests for information (clause 3.3). • Service discontinuity (clauses 4.1, 5.1, 9.1, 10.1, 10.2). • Maintenance of 24 hour emergency telephone number (clause 5.4). • Complaint handling process (clause 6.2). • Maintenance of complaint records (clause 6.5). • Compensation (clause 6.6). • Pricing (clauses 7.1, 7.2, 7.5). • Drought restrictions (clauses 9.2, 9.3). • Rate of interest on overdue accounts (clause 11.6).
10.2 (b) Code of practice and procedure on debt and disconnection. (clause 5.3.1 and 5.3.2)	<p>Clauses 5.3.1 and 5.3.2 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> • Sydney Water must develop a code of practice and procedure on debt and disconnection within 6 months of the Commencement Date • The code of practice and procedure on debt and disconnection must provide for deferred payment or payment by instalment options for consumption bills and these payment options to be advised in consumption bills.
10.2 (c) Compliance with the obligations under clause 6 of this Licence;	<p>Clause 6 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> • Comply with drinking water standards (6.2.1) • Have regard to risk minimisation practices and system management of public water supplies in the 1996 guidelines (including in relation to <i>Cryptosporidium</i> and <i>Giardia</i>) (6.2.2) • Prepare Annual Drinking Water Quality Monitoring Plan by 31 March to the satisfaction of NSW Health (6.3.1) • Monitor Drinking Water quality for the aesthetic guideline values of the 1996 guidelines (6.3.3 and 6.3.5) • Prepare Annual Drinking Water Quality Report by 30 November (6.4.2) • Prepare 5 year Drinking Water Quality Management Plan within 5 months of the commencement date (6.5.1) • Prepare Annual Drinking Water Quality Improvement Plan to the satisfaction of NSW Health within 1 month of the commencement date (6.5.3)
10.2 (c)	<ul style="list-style-type: none"> • Prepare Drinking Water Incident Management Plan to the satisfaction of NSW Health

Operating Licence Reference	Additional Comments
Compliance with the obligations under clause 6 of this Licence; (cont)	<p>within 1 month of the commencement date (6.5.6)</p> <ul style="list-style-type: none"> • Meet environmental water quality requirements for any discharges or water releases required by licences issued by the EPA or DLWC (6.6) • Supply of other grades of water according to relevant guidelines and requirements of EPA, NSW Health, DLWC, NSW Agriculture, other relevant agencies and the NSW Recycled Water Coordination Committee, where appropriate, (note RWCC no longer exists) (6.7.1)
10.2 (d) Compliance with the performance standards under clauses 7.1 and 7.2	<p>Clauses 7.1 and 7.1 of the Licence have the following requirements:</p> <ul style="list-style-type: none"> • Ensure that its systems comply with the standards for continuity, water pressure and sewerage overflows in schedule 4 or such standards as determined by the Minister (7.1.1) • Develop standards for minimum water pressure in low pressure areas within 1 month of the commencement date (7.2.1) • Comply with the standards developed in 7.2 or such standards determined by the Minister in 7.3 (7.2.2)
10.2 (e) Compliance with the water conservation targets under clause 8.1.1	<p>Clause 8.1.1 of the Licence requires Sydney Water to take action to reduce the quantity of water Sydney Water draws from all sources to 364 litres per capita per day by 2004/5 and to 329 litres per capita per day by 2010/2011.</p>
10.2 (f) Implementation of the demand management strategy under clause 8.2	<p>Clause 8.2 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> • Sydney Water must give priority consideration to demand management as the basis for planning the future provision of its Services, including addressing Unaccounted water losses. (8.2.2) • By no later than 1 September each year, Sydney Water must provide a report on implementation of its Demand Management Strategy for the previous 12 months. (8.2.3) • Sydney Water must engage a suitably qualified third party to verify the accuracy and soundness of its mathematical models for projecting future demands for water usage and report the results by 1 March 2000. (8.2.5)
10.2 (g) Progress in meeting the re-use target required under clause 8.3.1	<p>The auditor is required to assess and report on Sydney Water's actions to re-use, intercept or otherwise prevent from discharge, sewage or effluent by way of non-potable re-use. Sydney Water is to meet the targets set by the Minister from time to time. (8.3.1) [Note: Following the 1998 Operational Audit, the Minister required SWC to develop, by 31 December 1999, a re-use strategy for the next five and ten years.]</p>
10.2 (h) Progress in implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1	<p>Clause 8.4.1 of the Licence requires Sydney Water to encourage manufacturers of water appliances to improve the water use efficiency of these appliances where consistent with Sydney Water's objectives.</p>
10.2 (i) Performance in relation to the environment indicators under clause 9.1	<p>Clause 9.1 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> • Sydney Water must monitor and compile data on indicators of the direct impact of its activities on the environment, whether such activities are carried out by or on its behalf (9.1.1) • By no later than 1 September each year, Sydney Water must report on its performance in relation to the indicators compiled under clause 9.1.1 for the previous 12 months (9.1.3) • The yearly report provided by Sydney Water must provide information which enables a year-to-year comparison in relation to its performance in this area. Sydney Water is to use the indicators with historical annual values over at least the previous 10 years

Operating Licence Reference	Additional Comments
	<p>where comparable data permits (9.1.4)</p> <ul style="list-style-type: none"> The yearly report is to be made available to the public by Sydney Water within 1 month. Copies are to be made available from Sydney Water's offices on request and posted on Sydney Water's website (9.1.5)
10.2 (j) Performance in relation to the ESD Indicators compiled under clause 9.2.5	<p>Clause 9.2.5 of the Licence requires Sydney Water to commence monitoring and compiling data on the ESD Indicators from 1 July 2000</p> <p>Clause 9.2.6 of the Licence requires Sydney Water to report on its performance in relation to the ESD Indicators for the previous 12 months by no later than 1 September each year.</p>
10.2 (k) Compliance with the Environment Plan under clause 9.3	<p>Clause 9.3 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> Sydney Water must produce a five-year Environment Plan by 30 September 2000. After that it must produce further five-year Environment Plans every 5 years. (9.3.1) The report of Sydney Water's progress in meeting the Environment Plan, and in particular, in complying with the targets and timetables in clause 9.3.4 are to be compiled on an a yearly basis. (9.3.6)
10.2 (l) Compliance with the targets in the Energy Management Policy in clause 9.4.2	<p>Clause 9.4.2 of the Licence requires Sydney Water to adopt the following targets in the Energy Management Policy for energy consumption of buildings: 15% reduction from the 1995 level by 2001, and 25% reduction from the 1995 level by 2005</p> <p>Clause 9.4.3 of the Licence requires Sydney Water to report on its performance in relation to clause 9.4.2 for the previous 12 months by no later than 1 September each year</p>
10.2 (m) compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5	<p>Clause 9.5 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> Sydney Water is to implement the Botany Wetlands Plan in conjunction with other appropriate persons (9.5.2) By no later than 1 September each year, Sydney Water must report on its compliance with the Botany Wetlands Plan for the previous 12 months (9.5.3)
10.2 (n) compliance by Sydney Water with the trade waste objectives and performance indicators under clause 9.7	<p>Clause 9.7 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> Sydney Water must prepare a trade waste policy and management plan, which must include trade waste water objectives and performance indicators (9.7.1) By no later than 1 September each year, Sydney Water must report to on its progress in satisfying the objectives and indicators under clause 9.7.1 for the previous 12 months (9.7.2)
10.2 (o) effectiveness of Sydney Water's internal dispute resolution scheme under clause 12.1	<p>Clause 12.1 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> Sydney Water must establish internal complaints handling procedures for receiving, responding to and resolving complaints by Customers and Consumers against it (12.1.1) These procedures must be based on the Australian Standard AS4269-1995 Complaint Handling (12.1.2) Sydney Water must make information on its internal complaints handling procedures available to Customers and Consumers (12.1.3, 12.1.4) These procedures must be reviewed and amended where necessary by Sydney Water to ensure that they are based on the Australian Standard AS4269-1995 Complaint Handling (12.1.5) Sydney Water must report each year on the following details concerning complaints made against it which are handled by its internal complaints handling process: <ul style="list-style-type: none"> (a) the number and types of complaints received on a month by month basis, classified by Suburb into one or more of the following categories: <ul style="list-style-type: none"> i water quality, including health and aesthetic parameters; ii continuity of water supply; iii water pressure; iv sewage odour; v sewage overflow; vi stormwater and drainage services; and

Operating Licence Reference	Additional Comments
	<p>vii billing including availability charges payable under the Act</p> <p>(b) the number and type of complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be; and</p> <p>(c) any problems of a systemic nature arising from the complaints.</p> <p>(12.1.6)</p>
10.2 (p) effectiveness of Sydney Water's external dispute resolution scheme under clause 12.2	<p>Clause 12.2 of the Licence has the following requirements:</p> <ul style="list-style-type: none"> • By 1 March 2000 SWC must establish a Dispute Resolution Scheme for the resolution by a Dispute Resolution Body of disputes between it and its Customers and Consumers (12.2.1) • This Scheme must comply with the minimum standards, so far as applicable, specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes released by the Commonwealth Minister for Customs and Consumer Affairs in August 1997 (12.2.4) • SWC must prepare a pamphlet that explains how the Dispute Resolution Scheme operates and how it can be accessed and provide this to Customers (12.2.6, 12.2.7) • Sydney Water must provide written reports of the determinations made by the Dispute Resolution Body based on information available to it and information reasonably obtained from the Dispute Resolution Body. Where considered appropriate by Sydney Water and the Dispute Resolution Body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports (12.2.8) • SWC must produce a yearly report based on information available to it and information reasonably obtained from the Dispute Resolution Body. The report must contain <ul style="list-style-type: none"> (a) how the scheme works, (b) the number and types of complaints received by the Dispute Resolution Body, classified by Suburb into one or more of the following categories: <ul style="list-style-type: none"> (i) water quality including health and aesthetic parameters; (ii) continuity of water supply; (iii) water pressure; (iv) sewage odour; (v) sewage overflow; (vi) stormwater and drainage services; and (vii) customer billing, including availability charges payable under the Act (c) the outcome of those complaints , (d) the time taken to resolve complaints, (e) the procedure for resolving complaints, (f) any problems of a systemic nature arising from the complaints, (g) any other relevant information required by the Licence Regulator to be included in the report. <p>(12.2.9)</p>
10.2 (q) complaints made against Sydney Water to a court or tribunal under clause 12.3	<p>Clause 12.2 of the Licence requires Sydney Water to report by no later than 1 September each year on complaints made against it to a court or tribunal, such as the Fair Trading Tribunal, containing the following details:</p> <ul style="list-style-type: none"> (a) the number and types of complaints received by such other bodies, (b) the outcome of complaints, (c) how the complaints were resolved, (d) any problems of a systemic nature arising from the complaints, and (e) any other relevant information required by the Licence Regulator to be included in the annual report.

ATTACHMENT 2 – SUMMARY OF MINISTERIAL REQUIREMENTS AND AUDIT RECOMMENDATIONS FROM THE 1999/2000 OPERATIONAL AUDIT

Summary of Ministerial Requirements arising from the 1999/2000 Operational Audit¹

Operating Licence Section	Requirement
Drinking Water Quality	1. <i>"...I require a status report on the implementation of those actions (proposed in the Improvement Plan to ensure the maintenance of drinking water quality at North Richmond) by the conclusion of the 2000 Annual Drinking Water Quality Improvement Plan period (30 June 2001)."</i>
Provision of Sewerage Services	2. <i>"...To ensure that I remain fully appraised of Sydney Water's progress in reducing the number of unsewered properties, with due consideration to community requirements, environment and public health requirements, I look forward to regular progress reports on this matter."</i>
Independent validation of testing methodology	3. <i>"I note that there is a difference of opinion between the auditor and AWT as to the meaning of the term 'independent validation' and how the process of independent validation should be pursued. So that I may be appraised of developments in this scientific debate, I require regular updates. The first of these updates is to be provided by 31 December 2000. If there is a significant shift in the scientific community expect to be informed immediately."</i>
	4. <i>"...I require AWT's laboratory to continue to satisfy the NATA requirements to retain accreditation"</i>
	5. <i>"...I require Sydney Water to seek information from NATA in relation to AWT's methodology and processes and provide me with this information by 31 December 2000."</i>
Trend in Sewage Treatment Plant Odours	6. <i>"...I expect the next audit to report a downward trend in odour complaints at these facilities"</i>
Customer Council Consultation	7. <i>"...I require Sydney Water to develop appropriate measures for effective consultation in conjunction with Customer Councils and then enter into discussions with IPART to negotiate their adoption for audit purposes. I require negotiations with IPART to commence by the end of March 2001."</i>
Community Consultation	8. <i>" I require Sydney Water to develop and deploy guidelines and training in effective community consultation. I also require a report by 31 December 2000 on what mechanisms have been put in place to ensure effective community consultation."</i>

¹ Letter from the Minister for Energy to the Chairman, Sydney Water, 28 July 2000.

Operating Licence Section	Requirement
Asset Management	9. “ I require a report on Sydney Water’s strategic framework for asset management. This report is to cover the main components of Sydney Water’s asset planning and decision making process, taking into account reviews of system performance standards. The report will also address deployment of this strategy throughout Sydney Water’s operations, maintenance and asset creation plans. Progressive development and deployment of detailed asset plans within the strategy is to be undertaken over the following two years from the receipt of the report. I require this report by 31 December 2000.”
Potable Water Backflow Prevention Devices	10. “...I require six monthly reports on the progress of the backflow prevention program. I will be looking for a level of assurance that Sydney Water is being diligent in the management of the program. The reports are to be provided to me at the same time as the regular Operating Licence Compliance reports.”
Customer Service	11. “...I require the Corporation to develop a suite of performance measures relating to customer service and satisfaction.
	12. “I further require Sydney Water to enter into discussions with IPART to negotiate the adoption of the measures for audit purposes. I require negotiations with IPART to commence by the end of March 2001 with the measures placed on the Sydney Water website within one month of their finalisation and performance reported on that site at least six monthly.”

APPENDIX B
2000/01 OPERATING LICENCE

Operating

LICENCE

under the
Sydney Water Act 1994

NEW SOUTH WALES



SYDNEY WATER ACT 1994

**OPERATING LICENCE RENEWED UNDER SECTION 17 AND
AMENDED UNDER SECTION 16 OF THE SYDNEY WATER ACT 1994**

With the advice of the Executive Council, I, the Honourable Gordon Samuels AC, Governor of New South Wales, hereby renew the operating licence of Sydney Water Corporation under section 17 of the Sydney Water Act, and amend the operating licence under 16 of the Sydney Water Act 1994 and clause 10.1 of the operating licence, in the manner set out below.


Governor of New South Wales

Signed at Sydney, this 19th day of October 1999.

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SYDNEY WATER CORPORATION



Operating Licence under the *Sydney Water Act 1994*

- A. The Governor of New South Wales has renewed Sydney Water Corporation's operating licence under section 17 of the *Sydney Water Act 1994*.
- B. This Licence is renewed for a period of 5 years from 1 January 2000.
- C. This Licence is renewed subject to the Act.
- D. The Commencement Date of the Licence is 12 April 2000.

DEFINITIONS & INTERPRETATION

1.1 Definitions

In this Licence:

Act means the *Sydney Water Act 1994* and any regulations in force under it.

Annual audit is defined in clause 10.1.1 as the annual operational audit of Sydney Water.

Area of Operations means the area of operations specified in section 10(1) of the Act, a description of which is in Schedule 2.

[Note: Sydney Water has the same area of operations that Sydney Water Corporation Limited had immediately before it ceased to be a company State Owned Corporation. Section 10(1) requires that an operating licence contain a schedule that details the area of operations to which the operating licence applies.]

ARMCANZ means the Agriculture and Resource Management Council of Australia and New Zealand.

Catchment Authority means the Sydney Catchment Authority constituted under the *Sydney Water Catchment Management Act 1998*.

Commencement Date means the date on which these terms and conditions of licence take effect.

Competition Principles Agreement means the Competition Principles Agreement made on 11 April 1995 between the Commonwealth, States and internal territories, as in force from time to time.

Consumer means any person who consumes or uses the Services and includes, but is not limited to, a resident consumer (such as a tenant) or a non-resident consumer.

Customer means any person who is taken to have entered into a Customer Contract under section 55 of the Act, or to have entered into a contract on terms relating to the imposition of charges under sections 64 or 65 of the Act. Persons within this definition are owners of land:

- (a) connected to a water main, sewer main or re-use main owned by Sydney Water; or

- (b) not connected but having available for connection a water main, sewer main or re-use main owned by Sydney Water and liable for charges by Sydney Water in accordance with the Act; or

- (c) within a declared stormwater drainage area located in Sydney Water's Area of Operations.

Customer Contract means the contract annexed as Schedule 1, as varied from time to time in accordance with section 59 of the Act.

Dispute Resolution Body means a reputable person possessing qualifications and experience in the resolution of disputes by way of mediation or otherwise and includes a person who carries out investigative functions in the nature of an ombudsman.

Drinking water means water intended primarily for human consumption but which has other personal, domestic or household uses such as bathing and showering.

Ecologically Sustainable Development or ESD has the same meaning as in the *Protection of the Environment Administration Act 1991*.

ESD Indicators means indicators of Ecologically Sustainable Development practices and principles.

End of term review means the end of term review of this Licence under clause 2.4.1.

[Note: The End of term review is to commence on or about 1 January 2004.]

Environment Plan means a plan concerning the environment which contains, at a minimum, the details set out in clause 9.3.

EPA means the Environment Protection Authority constituted by the *Protection of the Environment Administration Act 1991*.

IPART means the Independent Pricing and Regulatory Tribunal of NSW constituted by the *Independent Pricing and Regulatory Tribunal Act 1992*.

Licence means this operating licence granted under section 12 of the Act to Sydney Water or any renewal of it, as in force for the time being.

Licence Review Body means IPART or, if the Minister administering the *Independent Pricing and Regulatory Tribunal Act 1992* directs that IPART is not to undertake the Mid-term review or the End of term review (as applicable) following receipt of advice from IPART concerning its workload, a person, (other than the Licence Regulator, Sydney Water or its Subsidiaries), who in the opinion of the Minister has suitable qualifications and experience for undertaking a Mid-term review or an End of term review.

Licence Regulator means a body established under section 30 of the Act.

[Note: The Licence Regulator is a body corporate representing the Crown.]

Memorandum of understanding means a memorandum of understanding to which clause 3.3.1 applies.

Mid-term review means the mid-term review of this Licence under clause 2.3.1.

[Note: The mid-term review is to occur on or about 1 January 2002.]

Minister means the Minister responsible for administering those provisions of the Act relating to this Licence.

National Parks and Wildlife means the National Parks and Wildlife Service constituted by the *National Parks and Wildlife Act 1974*.

NSW Fisheries means the NSW Department of Fisheries.

NSW Health means the NSW Department of Health.

NHMRC means the National Health and Medical Research Council.

Other Grades of water includes Re-use water but not Drinking water.

Property means any real property that is connected to or for which a connection is available to Sydney Water's Water supply system or Sewerage system determined from the point that the services provided by those systems are measured by Sydney Water for billing or other purposes. "Properties" has a corresponding meaning.

Rental Bond Board means the Rental Bond Board constituted by the *Landlord and Tenant (Rental Bonds) Act 1977*.

Re-use water means water derived from sewage treatment plants and untreated effluent extracted from sewers, which upon further treatment is suitable for its intended re-use application.

Services means the following services of Sydney Water permitted by this Licence and any applicable law:

- (a) storing and supplying water;
- (b) providing sewerage services;
- (c) providing stormwater drainage services; and
- (d) disposing of waste water.

Sewage overflow means a discharge of untreated or partially treated sewage from the Sewerage system. These overflows may occur in wet or dry weather.

Sewerage system means the system employed by Sydney Water to provide sewerage services.

SOC Act means the *State Owned Corporations Act 1989*.

Stormwater drainage system means the stormwater drainage system which Sydney Water must provide, operate, manage and maintain, which system was transferred from the Water Board to Sydney Water under Part 3 of the Act, subject to the transfer of any part or the whole of that system to another body where the Minister is satisfied that satisfactory arrangements have been made for the system to be provided by another body in accordance with section 14 of the Act.

Subsidiary has the same meaning as in the SOC Act. "Subsidiaries" has a corresponding meaning.

[Note: Section 3(1) of the State Owned Corporations Act 1989 defines a subsidiary to mean "a body corporate that is a subsidiary of a state owned corporation as determined in accordance with the Companies (New South Wales) Code or any other applicable law, and (in relation to a statutory SOC) includes a body corporate that would be such a subsidiary if the statutory SOC were a company SOC".]

DEFINITIONS & INTERPRETATION CONT.

Suburb means the suburb assigned a geographical name under the *Geographical Names Act 1966*.

Sydney Water means the Sydney Water Corporation constituted as a corporation by the Act.

Systems means the following systems of Sydney Water necessary for it to provide the Services:

- (a) Water Supply system;
- (b) Sewerage system;
- (c) Stormwater drainage system; and
- (d) Waste water system.

Trade Waste water means any Waste water generated from or as a result of an industrial or commercial activity undertaken, other than at domestic or household premises.

Unaccounted water losses means the difference between the amount of bulk water measured entering Sydney Water's supply system from all sources and the amount of water used by Customers, including metered water use and estimated legitimate unmetered usage. Unaccounted water losses includes the water lost, for example through evaporation, leakage from the system or unlawful use.

Waste water means any discarded water of any origin, clean or contaminated, that is discharged into a Sewerage or Stormwater drainage system.

Waste water system means the system employed by Sydney Water to provide waste water services.

Water Board means the body established under the *Water Board Act 1987*.

Water supply system means the system maintained and operated by, or on behalf of, Sydney Water for the purpose of supplying water derived from all sources of supply including water held in storage, groundwater and water made available for supply following chemical or other treatment, filtration or processing.

1.2 Interpretation

1.2.1 In this Licence, unless the contrary intention appears:

- (a) the word person includes an individual, a body corporate, an unincorporated body or other entity and one or more of each of them;
- (b) a reference to a law includes legislation (including the Act) and regulations made under legislation;
- (c) a reference to regulations includes ordinances, codes, licenses, orders, permits and directions;
- (d) a reference to a law, regulations, guidelines, any memorandum of understanding, plan or other strategy, standards, or list of indicators includes consolidations, amendments, variations, re-enactments, or replacements of any of them;
- (e) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation) and assigns;
- (f) a reference to a year means a calendar year that ends on 31 December. "Yearly" has a corresponding meaning;
- (g) a reference to a financial year means a period of 12 months that ends on 30 June; and
- (h) a reference to a clause or Schedule is to a clause of or Schedule to this Licence.

1.2.2 If this Licence requires that something undergo public consultation, it requires as a minimum that:

- (a) notice of that thing and the nature and timing of the consultation be:
 - (i) advertised in a major daily newspaper circulating in the Area of Operations;
 - (ii) communicated to persons to whom it would reasonably be expected notice should be given; and
 - (iii) given to the Licence Regulator.
- (b) submissions be sought from the public and that these submissions be considered by the person conducting the review.

- 1.2.3 If any part of this Licence is prohibited, void, voidable, illegal or unenforceable, then that part is severed from the Licence but without affecting the continued operation of the remainder of the Licence.
- 1.2.4 A reference in this Licence to any organisation, association, society, group or body shall, in the event of it ceasing to exist or being reconstituted, renamed or replaced or if its powers or functions are transferred to any other entity, body or group, refer respectively to any such entity, body or group, established or constituted in lieu thereof or succeeding to similar powers and functions.
- 1.2.5 If there is disagreement between Sydney Water and the Licence Regulator as to the proper interpretation of any term of this Licence, the matter must be referred to the Minister for resolution by him or a person appointed by him.
- 1.2.6 The italicised explanatory notes in this Licence do not form part of this Licence.
- 1.2.7 Where the Licence Regulator requires some act or thing to be done under this Licence, Sydney Water must provide reasonable assistance to the Licence Regulator, or other person nominated by the Licence Regulator, with the intent of enabling that act or thing to be done.
- 1.2.8 If there is any inconsistency between this Licence and a Memorandum of understanding or between this Licence and a Customer Contract (including any interpretation of any provision), this Licence will prevail to the extent of the inconsistency, in each case.
- 1.2.9 Any clause of this Licence that expressly or impliedly requires Sydney Water to vary the Customer Contract is subject to section 59 of the Act and is of no force or effect unless the variation is approved by the Governor under section 59 of the Act.

INFORMATION ABOUT THIS LICENCE

2.1 Objectives of this Licence

The objective of this Licence is to enable and require Sydney Water to lawfully provide the Services within its Area of Operations. Consistent with this objective, this Licence requires Sydney Water to:

- (a) meet the objectives and other requirements imposed on it in the Act;
- (b) comply with the quality and performance standards in this Licence;
- (c) recognise the rights given to Customers and Consumers;
- (d) be subject to operational audits of compliance with this Licence; and
- (e) establish a dispute resolution scheme.

2.2 Duration of licence

- 2.2.1 This Licence is renewed for a term of 5 years commencing on 1 January 2000.
- 2.2.2 Notwithstanding the expiry of the term, the Governor may renew this Licence in accordance with the Act.

[Note: Section 17 of the Act allows the Governor to renew the licence for a maximum of 5 years at a time.]

2.3 Mid-term Licence Review

- 2.3.1 On or about 1 January 2002, a Mid term review must be undertaken:
 - (a) to determine whether this Licence is fulfilling its objectives; and
 - (b) in relation to any matter required to be reviewed by this Licence.
- 2.3.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.3.3 The Licence Review Body must engage in public consultation as part of the review.
- 2.3.4 The Licence Review Body is to report to the Minister within six months of commencing the review on the following:
 - (a) the findings of the review;
 - (b) any recommendations for amendment to this Licence; and

- (c) any recommendations for amendment to any law that adversely impacts on this Licence.

- 2.3.5 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.3.6 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 16 of the Act.
- 2.3.7 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.
- 2.3.8 The Licence Review Body's report must be made available to the public by Sydney Water at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.

2.4 End of Term Licence Review

- 2.4.1 An End of term review for the purpose of determining the terms of any renewal of this Licence is to commence on or about 1 January 2004.
- 2.4.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.4.3 The Licence Review Body is to engage in public consultation as part of the review.
- 2.4.4 The Licence Review Body is to report to the Minister within 12 months of commencing the review on the following:
 - (a) the findings of the review;
 - (b) any recommendations for amendment to this Licence, including any additional terms to be included in any renewal of this Licence; and

- (c) any recommendations for amendment to any law that adversely impacts on this Licence.
- 2.4.5 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.4.6 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 16 of the Act.
- 2.4.7 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.
- 2.4.8 The Licence Review Body's report must be made available to the public by Sydney Water at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.

2.5 Licence amendment

- 2.5.1 Subject to section 16 of the Act and clause 2.5.2, this Licence may be amended by the Governor by notice in the Government Gazette.

[Note: Section 16 of the Act requires that, in addition to the above procedure, in order for an amendment to this Licence to take effect, written notice of the amendment must be laid before Parliament. 15 sitting days of each House of Parliament must have passed after the proposed amendments were laid before Parliament without a notice of motion being given to disallow the proposed amendment; or if such a notice has been given, it has lapsed, been withdrawn or defeated.]

- 2.5.2 Before notice of the Licence amendment is tabled in Parliament under section 16 of the Act, the Minister must give Sydney Water reasonable

notice of the proposed amendment to enable it to comply with the amendment (if relevant) upon its commencement.

2.6 Contravention of Licence

Sydney Water acknowledges that, if the Minister is of the opinion that Sydney Water has contravened this Licence, the Minister may take action against Sydney Water under section 19 of the Act.

[Note: Section 19 of the Act provides that, where the Minister is of the opinion that Sydney Water contravenes this Licence, the Minister may serve a notice on Sydney Water requiring it to rectify the contravention; or, in addition to or instead of the notice to rectify, the Governor may direct that a letter of reprimand is to be served on Sydney Water, or direct that Sydney Water is to pay a monetary penalty not exceeding \$1 million.]

2.7 Cancellation of Licence

This Licence may be cancelled by the Governor in the circumstances described in section 20 of the Act.

[Note: Section 20 sets out the circumstances in which this Licence may be cancelled by the Governor. These include where Sydney Water ceases without authority or permission to do any of the things referred to in section 14 of the Act; or where Sydney Water is, in the Minister's opinion, in material default in compliance with the Licence and has not rectified such default or shown cause why the Licence should not be cancelled; or where Sydney Water is convicted on more than 3 occasions within a 12 month period of criminal offences punishable by at least \$10,000 fine or 12 months penal servitude or imprisonment if Sydney Water were a natural person.]

SYDNEY WATER'S RESPONSIBILITIES

3.1 Responsibilities of Sydney Water under this Licence and other laws

- 3.1.1 Sydney Water must comply with this Licence and all applicable laws.

[Note: Sydney Water has obligations under a number of laws including:

- Protection of the Environment Operations Act 1997;
- Public Health Act 1991;
- Water Legislation Amendment (Drinking Water and Corporate Structure) Act 1998;
- Water Act 1912; and
- Independent Pricing and Regulatory Tribunal Act 1992.]

3.2 Responsibility of Sydney Water under the Sydney Water Act

- 3.2.1 Sydney Water acknowledges that its principal objectives under section 21 of the Act (each of which is of equal importance) are:

- (a) to be a successful business and to this end operate at least as efficiently as any comparable business, maximise the net worth of the State's investment in Sydney Water, and exhibit a sense of social responsibility by having regard to the interests of the community in which it operates;
- (b) to protect the environment by conducting its operations in compliance with the principles of Ecologically Sustainable Development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*;
- (c) to protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of this Licence.

- 3.2.2 Sydney Water acknowledges that its special objectives under section 22 of the Act are:

- (a) to reduce risks to human health; and
- (b) to prevent the degradation of the environment.

- 3.2.3 The special objectives are to be interpreted by reference to the objectives referred to in section 6(1)(b) of the *Protection of the Environment Administration Act 1991*, so far as they are relevant to Sydney Water.

3.3 Memorandum of Understanding

- 3.3.1 In accordance with section 35 of the Act, Sydney Water must maintain a Memorandum of understanding with each of the Water Administration Ministerial Corporation, NSW Health, and EPA for the term of this Licence.

[Note: Section 35 of the Act requires Sydney Water to enter into separate memoranda of understanding with certain regulatory agencies, being the Water Administration Ministerial Corporation, the Director-General of NSW Health and EPA. If Sydney Water and those regulatory agencies are not able to agree on a term of the memorandum of understanding, the view of the regulatory agency prevails. Section 36 deals with public exhibition of memoranda of understanding.]

- 3.3.2 The purpose of a Memorandum of understanding is to form the basis for co-operative relationships between the parties to the memorandum. In particular:

- (a) the memorandum with NSW Health is to recognise the role of NSW Health in providing advice to the Government of NSW in relation to drinking water quality standards and the supply of water which is safe to drink; and
- (b) the memorandum with the EPA is to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements;

- 3.3.3 Clause 3.3.1 does not limit the persons with whom Sydney Water may have a memorandum of understanding.

LICENCE AUTHORISATION & AREA OF OPERATIONS

4.1 What the licence authorises and regulates

- 4.1.1 This Licence is granted to enable and require Sydney Water to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable Systems for providing the Services throughout the Area of Operations.

[Note: The Systems include those systems of Sydney Water necessary to enable it to provide the Services.]

- 4.1.2 Sydney Water must ensure that the Systems comply with the quality and performance standards required in this Licence or required to be developed under this Licence.

4.2 Powers not limited

This Licence does not restrict or affect Sydney Water's power to carry out any functions imposed under any applicable law.

4.3 Area of Operations

The Area of Operations may only be varied under section 10 of the Act.

[Note: The Area of Operations for Sydney Water is listed in Schedule 2 of this Licence. Section 10 of the Act states that subject to certain requirements the Governor may vary the Area of Operations by order published in the NSW Government Gazette. Such order does not take effect until after the notice of the order has been laid before Parliament.]

4.4 Connection of Services

- 4.4.1 Subject to Sydney Water continuing to be in compliance with any applicable law, Sydney Water must ensure that its Services are available for connection on request to any land situated in the Area of Operations.
- 4.4.2 Connection to the Services is subject to any conditions Sydney Water may determine to ensure the safe, reliable and financially viable supply of Services to land in the Area of Operations in accordance with this Licence. Satisfactory

compliance with the conditions of connection is to be taken as forming an essential requirement for gaining Sydney Water's approval for connection of the land to a water main or sewer main under section 56(2) of the Act.

4.5 Non-exclusive licence

This Licence does not prohibit another person from providing 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.

CUSTOMER & CONSUMER RIGHTS

5.1 Customer contract

- 5.1.1 The Customer Contract may only be varied in accordance with section 59 of the Act.

[Note: The Customer Contract is set out in Schedule 1 of this Licence. Division 7 of Part 6 of the Act contains various provisions in relation to the Customer Contract.]

[Note: Section 59 of the Act requires that a variation of the Customer Contract must be published in a daily newspaper circulating in the Area of Operations at least 6 months before the variation becomes effective, or a shorter period of notice approved by the Minister. A copy of the notice must also be given to the Customer. Section 59 does not apply to an alteration of fees or charges where the alteration is in accordance with an IPART determination.]

- 5.1.2 Subject to section 56 of the Act, the Customer Contract automatically applies to persons specified in section 55(1) of the Act.
- 5.1.3 The Customer Contract sets out the rights and obligations of Customers and Sydney Water in relation to the Services provided through Systems required under this Licence. These rights and obligations are in addition to the rights and obligations conferred by the Act and any other law.
- 5.1.4 A copy of the Customer Contract, and any variations to it must be posted on Sydney Water's website on the internet for downloading free of charge and made available at its premises for access or collection by any member of the public, also free of charge.
- 5.1.5 Unless otherwise required by the Minister, Sydney Water must initiate an independent review of the Customer Contract to be carried out within 12 months of the Commencement Date. The review must have regard to the system performance standards in clause 7.1.1 or as determined by the Minister under clause 7.3 of this Licence.
- 5.1.6 The person undertaking the review must produce a report setting out its findings and recommendations. A copy of the report must be provided to the Minister upon its production.
- 5.1.7 Within 3 months of the completion of the review of the Customer Contract, Sydney Water must take all

steps necessary to issue a new Customer Contract that addresses the recommendations of the review report.

- 5.1.8 Within 3 months of review of the Customer Contract under clause 5.1.5, Sydney Water must prepare a pamphlet that:
- (a) provides a brief explanatory introduction to the Customer Contract;
 - (b) summarises the key rights and obligations of Customers under the Customer Contract; and
 - (c) contains a list of Sydney Water's local offices and emergency contact numbers in its Area of Operators.
- 5.1.9 The pamphlet prepared under clause 5.1.8 must be updated when changes are made to the Customer Contract and must be disseminated by Sydney Water free of charge:
- (a) by placing sufficient copies with the Rental Bond Board for collection by interested persons and where reasonably possible for despatch by the Rental Bond Board in correspondence sent to tenants;
 - (b) to customers, at least once annually with their quarterly or other bills; and
 - (c) to any other person on request.
- 5.1.10 As provided by and subject to section 57 of the Act, Sydney Water may enter into other contracts or arrangements for the supply of Services. The terms of any such contract or arrangement are such as may be negotiated between Sydney Water and any such person.

5.2 Consumers

- 5.2.1 Sydney Water must fulfil its obligations under the Customer Contract relating to complaint handling and complaint resolution procedures as if those obligations also extended to Consumers.

5.3 Code of practice & procedure on debt & disconnection

- 5.3.1 Within 6 months of the Commencement Date, Sydney Water must develop a code of practice and procedure on debt and disconnection.

- 5.3.2 The code of practice and procedure on debt and disconnection must:
- (a) provide for deferred payment or payment by instalment options for consumption bills; and
 - (b) provide for the payment options referred to in (a) to be advised in consumption bills.
- 5.3.3 Sydney Water must include the code of practice and procedure on debt and disconnection in its Customer Contract.
- 5.3.4 Sydney Water must disseminate free of charge information on its code of practice and procedure on debt and disconnection:
- (a) by placing sufficient copies with the Rental Bond Board for collection by interested persons;
 - (b) to Customers at least once annually with their quarterly or other bills; and
 - (c) to any other person on request.
- 5.4 Customer councils**
- 5.4.1 In accordance with section 15 of the Act, Sydney Water must establish and regularly consult with one or more Customer Councils to enable community involvement in issues relevant to the performance of Sydney Water's obligations under this Licence.
- 5.4.2 A Customer Council may be utilised by Sydney Water, among other things, to provide it with high quality advice on the interests of Customers and Consumers of Sydney Water and on the Customer Contract, in accordance with the terms of the relevant Customer Council Charter, and on such other key issues related to Sydney Water's planning and operations as Sydney Water may determine.
- 5.4.3 The first Customer Council under this Licence in respect of the period after the Commencement Date must be established within 3 months of the Commencement Date. However, if Sydney Water has appointed members to its Customer Councils since 1 January 2000 substantially in accordance with clauses 5.4.5 to 5.4.11 (inclusive), Sydney Water will be taken to have complied with this clause 5.4.3.
- 5.4.4 Sydney Water must appoint the members of a Customer Council, consistent with this Licence.
- 5.4.5 At all times, the membership of one or more Customer Councils must between them include a representative from at least each of the following:
- (a) business and consumer groups;
 - (b) low income households;
 - (c) people living in rural and urban fringe areas;
 - (d) residential consumers;
 - (e) environmental groups;
 - (f) local government; and
 - (g) the Ethnic Communities Council.
- 5.4.6 Sydney Water may require a representative under clause 5.4.5 to serve on so many Customer Councils as it considers appropriate to best discharge the tasks assigned to him or her.
- 5.4.7 Subject to clause 5.4.10, the term of a member of a Customer Council will expire 2 years after his or her appointment.
- 5.4.8 Subject to clause 5.4.11, at least half of the persons appointed as members of a Customer Council must be new members. That is, they must not be persons who were members of a Customer Council at any time during the period of 2 years before the date of their appointment.
- 5.4.9 Subject to clause 5.4.11, no person may be appointed as a member of a Customer Council for more than 2 consecutive terms (including, without limitation, any term served as a replacement member under clause 5.4.10).
- 5.4.10 If a member's place becomes vacant before the expiration of his or her term, Sydney Water may appoint a suitable replacement for the remainder of that member's term.
- 5.4.11 If Sydney Water chooses to establish one or more Customer Councils the majority of members of which are not individuals, clauses 5.4.8 and 5.4.9 do not apply to those Customer Councils.

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[Note: For example, Sydney Water might choose to establish a corporate Customer Council, the majority of members of which might be industry peak bodies. In this case, it is not desirable to refuse to reappoint these bodies after they have been members for 2 consecutive terms because Sydney Water would then lose the input of these bodies and the industries they represent. The selection criteria for membership on these Customer Councils must be addressed in the relevant Customer Council's Charter under clause 5.4.12(b).]

- 5.4.12 Subject to clause 5.4.13, within 3 months of establishing the Customer Councils or the Commencement Date (whichever is the later) Sydney Water must develop in consultation with members of the Customer Council, a Customer Council Charter that addresses the following issues:
- (a) the role of the Customer Councils;
 - (b) selection criteria on how members will be appointed;
 - (c) information on how the Customer Council will operate;
 - (d) a description of the type of matters that will be referred to the Customer Council;
 - (e) procedures for the conduct of Customer Council meetings, including the appointment of a chairperson;
 - (f) communicating the outcome of the Customer Council's work to Sydney Water;
 - (g) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and
 - (h) funding and resourcing of the Customer Council by Sydney Water.
- 5.4.13 If Sydney Water:
- (a) has appointed members to its Customer Councils since 1 January 2000 and is taken to have complied with clause 5.4.3; and
 - (b) has developed in consultation with members of those Customer Councils a Customer Council Charter substantially in accordance with clause 5.4.12,
- Sydney Water will be taken to have complied with clause 5.4.12.

- 5.4.14 There must be a Customer Council Charter for each Customer Council. However a single Customer Council Charter may be expressed to apply to more than one Customer Council.
- 5.4.15 Sydney Water must provide a Customer Council with information within its possession or under its control necessary to enable the Customer Council to discharge the tasks assigned to it, other than information or documents over which Sydney Water or another person claims confidentiality or privilege.
- 5.4.16 A copy of each Customer Council Charter must be posted on Sydney Water's website on the internet for downloading free of charge and made available at its offices for access or collection by any member of the public, also free of charge.
- 5.4.17 As part of the End of term review, the Licence Review Body must evaluate and report on the effectiveness of Customer Councils and compliance with the Customer Council Charter.

WATER QUALITY

6.1 Interpretation

In this Part:

aesthetic guideline values means the concentration or measure of a physical characteristic of water quality (a physical or chemical property) that is associated with good water quality. Some examples include appearance, pH, taste and odour.

health guideline values means the concentration or measure of a physical characteristic of water quality (a physical, chemical, biological or radionuclide property) that, based on present knowledge, does not result in any significant risk to the health of a person over a lifetime of consumption.

Physical characteristics of Drinking water means those physical characteristics of Drinking water specified in the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 including dissolved oxygen, hardness, pH, taste and odour, total dissolved solids, true colour and turbidity.

Potable water backflow prevention devices are plumbing cross connections designed, installed and maintained to prevent contamination of drinking water.

6.2 Drinking Water Quality - Standards

6.2.1 Sydney Water must comply with the following relating to Drinking water:

- (a) the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 ("1996 Guidelines") relating to health guideline values;
- (b) any amendments updates or supplements of the 1996 Guidelines ("Updated Guidelines") relating to health guideline values specified by NSW Health;
- (c) the aesthetic guideline values of the 1996 Guidelines specified by the NSW Minister for Health following consultation with the Minister; and
- (d) the aesthetic guideline values of the Updated Guidelines specified by the NSW Minister for Health following consultation with the Minister.

[Note: A significant aim of the Drinking water quality standards is to ensure that Sydney Water achieves appropriate public health outcomes.]

6.2.2 In delivering the Services, Sydney Water must have regard to the concepts of risk minimisation practices and system management of public water supplies in the 1996 Guidelines and Updated Guidelines (including in relation to *Cryptosporidium* and *Giardia*).

[Note: In releasing draft guidelines on Cryptosporidium and Giardia, NHMRC has stated that it is not possible to set guideline levels for Cryptosporidium and Giardia in drinking water because there is a lack of a suitable method to identify organisms in drinking water that cause human infection.]

6.2.3 Sydney Water must commission an independent study of the costs and benefits of Sydney Water complying with the aesthetic guideline values of the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 and must report to the Licence Review Body on the results of that study by no later than 31 January 2002, to enable the Licence Review Body to report on the matter as part of the Mid-term review. Sydney Water must ensure that the process of conducting the independent study includes public consultation in accordance with clause 1.2.2 on a discussion paper before the study is finalised.

6.3 Drinking Water Quality - Monitoring

6.3.1 Sydney Water must prepare, to the satisfaction of NSW Health, a comprehensive Annual Drinking Water Quality Monitoring Plan for the Water supply system by 30 June 2000 and then by 31 March in each subsequent year, for the duration of this Licence.

6.3.2 The Annual Drinking Water Quality Monitoring Plan for the Water supply system must include system performance monitoring and regular sampling, laboratory testing and processes to ensure quality control. The monitoring of Drinking water quality must include:

- (a) the health guideline values for which compliance is required under clauses 6.2.1 (a) and (b); and

- (b) the aesthetic guideline values for which compliance is required under clauses 6.2.1 (c) and (d).
- 6.3.3 Sydney Water must monitor Drinking water quality for the aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of Drinking water.
- 6.3.4 The Drinking water quality monitoring must assess the quality of Drinking water in Sydney Water's Water supply system. The sampling frequency and the locations chosen for the monitoring should be such that the results are representative of the quality of water supplied to Customers and Consumers.
- 6.3.5 Sydney Water must undertake the Drinking water quality monitoring for the period from the Commencement Date to 30 June 2001 and after that for each subsequent financial year.

[Note: The requirement for an annual drinking water monitoring plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

6.4 Drinking Water Quality - Reporting

- 6.4.1 Sydney Water's water quality monitoring test results must be placed on its website on the internet for downloading by the public, free of charge and made available at its offices for access or collection by any person, also free of charge.
- 6.4.2 Sydney Water must produce an Annual Drinking Water Quality Report that reports on the Water supply system in relation to:
 - (a) the health guideline values for which compliance is required under clauses 6.2.1 (a) and (b);
 - (b) the aesthetic guideline values for which compliance is required under clauses 6.2.1 (c) and (d); and
 - (c) the aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of drinking water.
- 6.4.3 The Annual Drinking Water Quality Report must also include a summary of monitoring information, indicating water quality trends and problems, and a summary of system failures (significant and major water quality incidents) over the previous year and action taken to resolve them and how public health was protected.

- 6.4.4 The Annual Drinking Water Quality Report must be prepared by 30 November each year and must be placed on Sydney Water's website on the internet for downloading by the public free of charge and made available at its offices for access or collection by any person, also free of charge.

6.5 Drinking Water - Planning

- 6.5.1 Sydney Water must prepare, to the satisfaction of NSW Health, a Five-Year Drinking Water Quality Management Plan within 5 months after the Commencement Date. Sydney Water must release a discussion paper in relation to the Five-Year Drinking Water Quality Management Plan within 2 months after the Commencement Date and must engage in public consultation in accordance with clause 1.2.2 on the discussion paper.
- 6.5.2 The Five-Year Drinking Water Quality Management Plan must include strategies for the comprehensive management of the quality of Drinking water in Sydney Water's Water supply system, the aim of which is to reduce risk to public health and meet any aesthetic guideline values extended to Sydney Water in or by this Licence. It must also include an audit program for Potable water backflow prevention devices.

[Note: The requirement for a long term water quality management strategy is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

- 6.5.3 Sydney Water must prepare, to the satisfaction of NSW Health, an Annual Drinking Water Quality Improvement Plan for the Water supply system within 1 month after the Commencement Date and after that by 31 March in each year, unless otherwise specified following the review under clause 6.5.5.
- 6.5.4 The Annual Drinking Water Quality Improvement Plan must incorporate system and operational changes needed to address problems identified through drinking water quality monitoring data and through periodic system inspections and evaluations, the aim of which is to reduce risks to public health and meet any aesthetic guideline values extending to Sydney Water in or by this Licence.

- 6.5.5 The Annual Drinking Water Quality Improvement Plan must be reviewed as part of the Mid-term review under clause 2.3.1 to assess its continued effectiveness and whether there is a continued need for the plan each year.

[Note: The requirement for an annual drinking water quality improvement plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

- 6.5.6 Sydney Water must prepare, to the satisfaction of NSW Health, a Drinking Water Incident Management Plan, within 1 month after the Commencement Date which must remain in place until any new plan is developed in agreement with NSW Health.

- 6.5.7 The Drinking Water Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking water incidents including media and stakeholder liaison and any notification of public health advice received from NSW Health to Customers.

[Note: The requirement for a comprehensive incident management plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

6.6 Environmental Water Quality

Sydney Water must meet the environmental water quality requirements for any discharges or water releases required by licences issued to it by the EPA or the Department of Land and Water Conservation.

6.7 Other Grades of Water

- 6.7.1 Other Grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee.

[Note: The NSW Recycled Water Coordination Committee has produced the NSW Guidelines for Urban and Residential Use of Reclaimed Water, May 1993.]

- 6.7.2 Minimum standards and guidelines to regulate the supply of Other Grades of water must be identified in the Mid-term review. Where the Minister is of the opinion that the minimum standards and guidelines for the supply of Other Grades of water identified in the Mid-term review are appropriate, such standards and guidelines must be observed by Sydney Water as a condition of this Licence.

- 6.7.3 Where there is a conflict between any of the guidelines, requirements or standards applying to Sydney Water under clause 6.7 the Minister's decision will prevail.

7

SYSTEM PERFORMANCE

7.1 Compliance with performance standards

- 7.1.1 Sydney Water must ensure that its Systems comply with the standards for continuity, water pressure and sewage overflows in Schedule 4 or such other standards determined by the Minister under clause 7.3.

7.2 Standards in respect of low pressure areas

- 7.2.1 Within 1 month after the Commencement Date, Sydney Water must develop standards that establish the minimum level of water pressure required for the following low pressure areas in Schedule 4:
- (a) Urban areas adjacent to reservoirs in the Blue Mountains.
 - (b) Non-urban properties in Bayview, West Camden, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains.
- 7.2.2 Sydney Water must comply with the standards developed under clause 7.2 or such other standards determined by the Minister under clause 7.3.

7.3 Review of performance standards

- 7.3.1 Within 12 months of the Commencement Date, a person nominated by the Minister must consult with Sydney Water and other stakeholders and report to the Minister on whether the standards referred to in clauses 7.1 and 7.2 should be amended, and if so the nature of the amendments.
- 7.3.2 The report under clause 7.3.1 must include an analysis of the benefits and costs of amendments to the performance standards.
- 7.3.3 Following receipt of the report the Minister, or a person appointed by the Minister, may publish a notice which lists the amendments to the performance standards that must be adopted by Sydney Water.
- 7.3.4 Any amendments to the performance standards that must be adopted by Sydney Water under clause 7.3.3 must be incorporated into the Customer Contract as soon as reasonably possible and also considered by any review of the Customer Contract and the Mid-term review of this Licence.

7.4 Keeping of records on discontinuity, low pressure & sewage overflow

- 7.4.1 In this clause:
- Delivery system means the geographical classification used by Sydney Water for its own internal purposes which is based on geographic regions employed as part of the Water supply system or Sewerage system.
- 7.4.2 Sydney Water must keep records of the nature of incidents of discontinuity, low pressure and sewage overflows occurring each year and classified according to Delivery system.
- 7.4.3 From the Commencement Date, Sydney Water's record keeping systems must permit the reporting of incidents by Delivery system and by the commencement of the Mid-term review, also by Suburb.
- 7.4.4 Sydney Water must maintain record systems that are sufficient to enable it to measure compliance with the standards on discontinuity, low pressure and sewage overflows in Schedule 4.
- 7.4.5 Sydney Water's records must include details of any complaints concerning discontinuity, low pressure and sewage overflows regardless of whether they have been received from Customers, Consumers and real estate agents or other persons on behalf of Consumers.
- 7.4.6 Sydney Water must record multiple incidents of discontinuity, low pressure and sewage overflow occurring each year as separate incidents. In particular each incident of discontinuity affecting the one Customer or Consumer is to be recorded as one incident.
- 7.4.7 From the later of the Commencement Date and 1 July 2000, Sydney Water must also record the length of incidents of discontinuity, indicating whether the period of discontinuity has lasted for more than 6 hours, more than 12 hours, or more than 24 hours.
- 7.4.8 Sydney Water must also record the respective number of planned and unplanned interruptions to its Water supply system or to the supply of Drinking water.

7.5 Annual reporting on compliance with performance standards

- 7.5.1 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its compliance with the performance standards required to be compiled under clauses 7.1 and 7.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 7.5.2 As part of its report, Sydney Water must provide the Licence Regulator with physical or electronic access to the records kept by Sydney Water under clause 7.4.

WATER CONSERVATION & DEMAND MANAGEMENT

8.1 Water Conservation Target

8.1.1 Sydney Water must take action to reduce the quantity of water (other than Re-use water) it draws from all sources to the following target levels ("water conservation targets"):

- (a) 364 litres per capita per day by 2004/5 (being a reduction of 142 litres per capita per day or 28% from the 1990/1991 baseline);

[Note: The 1990/1991 baseline is 506 litres per capita per day.]

- (b) 329 litres per capita per day by 2010/2011 (being a reduction of 177 litres per capita per day or 35% from the 1990/1991 baseline);
- (c) Such target level for 2014/2015 as determined as part of the Mid-term review of this Licence conducted under clause 2.3.1.

8.1.2 The following principles and parameters must be applied by Sydney Water in assessing compliance with the water conservation targets:

- (a) assessment of performance against water conservation targets is to be adjusted for the effects of weather on water usage; and
- (b) the water conservation targets in clause 8.1.1 are for an average year.

8.1.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in complying with the water conservation targets in clause 8.1.1 (which may include any targets for Unaccounted water losses), to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.2 Demand Management Strategy

8.2.1 In this clause:

Demand Management Strategy means the 1995 Demand Management Strategy updated from time to time by Sydney Water or as required by the Minister.

[Note: The 1995 Demand Management Strategy was released by Sydney Water in October 1995. Following the 1998 operational audit, the Minister required Sydney Water to produce a revised Demand Management Strategy by 31 December 1999.]

8.2.2 Sydney Water must give priority consideration to demand side management as the basis for planning the future provision of its Services, including addressing Unaccounted water losses.

8.2.3 By no later than 1 September each year, Sydney Water must provide a report (the "Demand Management Strategy Implementation Report") to the Licence Regulator on implementation of Sydney Water's Demand Management Strategy for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.2.4 The Demand Management Strategy Implementation Report is to:

- (a) contain an estimate of past, current and projected water uses and distinguish between residential, industrial, commercial and government uses;
- (b) describe the frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage or loss, drought or emergency;
- (c) identify conservation measures currently adopted and being practised;
- (d) describe, cost and evaluate additional conservation measures;
- (e) describe future plans for water reclamation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users;
- (f) evaluate these plans in terms of their cost and contrast with the cost of alternative water supplies;
- (g) prioritise and schedule the implementation of courses of action found to be cost effective; and
- (h) identify strategies for reducing Unaccounted water losses.

- 8.2.5 Sydney Water must engage a suitably qualified third party to verify the accuracy and soundness of its mathematical models for projecting future demands for water usage and report the results to the Licence Regulator within 1 month after the Commencement Date.

8.3 Reducing Discharges

- 8.3.1 Sydney Water must take action to re-use, intercept or otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of Customers and Consumers by way of non-potable re-use. Sydney Water is to meet the targets set by the Minister from time to time.

[Note: A re-use target of 58 megalitres per day was gazetted on 30 June 1995 under section 27(2) of the Act. Following the 1998 Operational Audit the Minister has required Sydney Water to develop, by 31 December 1999, a re-use strategy for the next five and ten years.]

- 8.3.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in meeting the re-use target required under clause 8.3.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.4 Water Conservation Rating and Labelling

- 8.4.1 Sydney Water, through continuing support for the National Water Conservation Rating and Labelling Scheme, is to encourage manufacturers of water appliances to improve the water use efficiency of these appliances where consistent with Sydney Water's objectives.
- 8.4.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance under clause 8.4.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

ENVIRONMENT — INDICATORS & PLANS

9.1 Environmental Indicators

- 9.1.1 In accordance with section 14(1)(d) of the Act, Sydney Water must monitor and compile data on indicators of the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of Sydney Water.
- 9.1.2 Except for those indicators solely applicable to the Catchment Authority, the environmental indicators used are to accord with those published in the Government Gazette on 15 December 1995.
- 9.1.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to the indicators compiled under clause 9.1.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.1.4 The yearly report provided by Sydney Water must provide information which enables a year to year comparison in relation to Sydney Water's performance in this area. In particular, Sydney Water is to use the indicators with historical annual values over at least the previous 10 years where comparable data permits such a compilation.
- 9.1.5 The yearly report is to be made available to the public by Sydney Water within 1 month after receipt by the Licence Regulator. Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.
- 9.1.6 The environmental indicators in clause 9.1.2 are to be reviewed as part of the End of term review.

9.2 Ecologically Sustainable Development Indicators

- 9.2.1 Sydney Water must develop measures to indicate the degree to which its activities and Services comply with the principles of Ecologically Sustainable Development or ESD.

- 9.2.2 Sydney Water must develop a draft list of ESD Indicators within 1 month after the Commencement Date. The draft list must have regard to:
 - (a) corporate management (including corporate policy and planning, and corporate asset management);
 - (b) management of the System; and
 - (c) the planning, design and construction of
 - (i) new Systems;
 - (ii) the upgrading of existing Systems; and
 - (iii) depots.
- 9.2.3 The draft list developed by Sydney Water must undergo public consultation where the public have at least 20 days to provide their comments. Specific comments must also be invited from EPA, the Department of Land and Water Conservation, National Parks and Wildlife, NSW Fisheries, SEDA and peak environment non-governmental organisations.
- 9.2.4 Within three months of the close of submissions, following public consultation under clause 9.2.3, Sydney Water must present a final list of ESD Indicators to the Minister for approval and, if approved, for publication in the Gazette.
- 9.2.5 Sydney Water must commence monitoring and compiling data on the ESD Indicators from the later of the Commencement Date and 1 July 2000.
- 9.2.6 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to the ESD Indicators compiled under clause 9.2.4 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.2.7 The yearly report provided under clause 9.2.6 is to be made available by Sydney Water to the public within 1 month after receipt by the Licence Regulator. Copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.
- 9.2.8 The ESD Indicators in clause 9.2.4 are to be reviewed as part of the End of term review.

9.3 Environment Plan

- 9.3.1 Sydney Water must produce a five-year Environment Plan by the later of the Commencement Date and 30 September 2000. After that Sydney Water must produce further five-year Environment Plans every 5 years.
- 9.3.2 Sydney Water must engage in public consultation in developing the Environment Plan.
- 9.3.3 The Environment Plan must:
 - (a) contain details of Sydney Water's water, waste water and stormwater strategies, as well as the environmental aspects of its other activities such as waste minimisation and heritage;
 - (b) endorse ESD principles; and
 - (c) be recognised in Sydney Water's business plans.
- 9.3.4 The Environment Plan must set targets and time tables for compliance by Sydney Water with those targets over the term of the Environment Plan. These targets must utilise the environmental and ESD indicators in clauses 9.1 and 9.2 and also the targets and indicators in clauses 9.6 and 9.7.
- 9.3.5 The Environment Plan must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.
- 9.3.6 The report detailing Sydney Water's progress in meeting the Environment Plan, and in particular, in complying with the targets and timetables in clause 9.3.4 are to be compiled on an a yearly basis. Within one month of its completion, the report must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.
- 9.3.7 Amendments may only be made to the Environment Plan following public consultation.

9.4 Energy Management

- 9.4.1 In this clause:

Energy Management Policy means the energy management policy of the NSW Government released by the NSW Department of Energy (now the Ministry of Energy and Utilities) in 1998 and updated from time to time.
- 9.4.2 Sydney Water must adopt the following targets in the Energy Management Policy for energy consumption of buildings:
 - (a) 15% reduction from the 1995 level by 2001;
 - (b) 25% reduction from the 1995 level by 2005; and
 - (c) any subsequent targets set by the Energy Management Policy.
- 9.4.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to clause 9.4.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

9.5 Botany Wetlands

- 9.5.1 In this clause:

Botany Wetlands Plan means the plan of management for the area known as Botany Wetlands, issued by Sydney Water in December 1997.
- 9.5.2 Sydney Water is to implement the Botany Wetlands Plan in conjunction with other appropriate persons.
- 9.5.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its compliance with the Botany Wetlands Plan for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.5.4 Prior to commencement of the End of term review, Sydney Water must review the Botany Wetlands Plan in consultation with EPA, the Department of Land and Water Conservation, National Parks and Wildlife, and peak environmental non-governmental organisations for the purpose of advising the Minister whether any amendments are required to the Plan.

9.6 Pollution reduction targets

Where pollution reduction targets are set under section 23 of the Act, the results are to be published each year and made available to EPA and members of the public for the purposes of section 23(7) of the Act, and may be included in a report on environmental indicators required to be compiled and published under Part 9.1.

9.7 Trade waste

- 9.7.1 Sydney Water must prepare a trade waste policy and management plan, which must include trade waste water objectives and performance indicators. Sydney Water must ensure that the process of preparing the trade waste policy and management plan includes public consultation in accordance with clause 1.2.2 on a discussion paper before the plan is finalised.
- 9.7.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in satisfying the objectives and indicators under clause 9.7.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

OPERATIONAL AUDITS OF THIS LICENCE

10.1 Commission of audits

- 10.1.1 The Licence Regulator must initiate an operational audit of Sydney Water as soon as practicable after 30 June each year covering the preceding 12 months, as required by this Part (the "Annual audit"). However the first Annual audit under this Licence will cover the period from 1 January 2000 to 30 June 2001.

[Note: The Licence Regulator is to arrange for the conduct of an operational audit covering the calendar year 1999.]

- 10.1.2 The Annual audit must be conducted by the Licence Regulator or by a person, other than Sydney Water or its Subsidiary, that the Licence Regulator considers is suitably qualified to perform the Annual audit.
- 10.1.3 As part of the Annual audit, the Licence Regulator must invite members of the public to make submissions to it. The Licence Regulator may also undertake any other public consultation it considers appropriate.

10.2 What the audit is to report on

- 10.2.1 The Licence Regulator or the person undertaking the Annual audit must investigate and prepare a report on the following:
- (a) on-going compliance by Sydney Water with its Customer Contract and specific areas of non-compliance;
 - (b) Sydney Water's compliance with its code of practice and procedure on debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water;
 - (c) compliance by Sydney Water with its obligations under Part 6 of this Licence;
 - (d) compliance by Sydney Water with the performance standards under clauses 7.1 and 7.2;
 - (e) compliance by Sydney Water with the water conservation targets under clause 8.1.1;
 - (f) Sydney Water's performance in relation to implementation of the demand management strategy under clause 8.2;
 - (g) progress by Sydney Water in meeting the re-use target required under clause 8.3.1;
 - (h) progress by Sydney Water in relation to the

implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1;

- (i) Sydney Water's performance in relation to the environment indicators under clause 9.1;
- (j) Sydney Water's performance in relation to the ESD Indicators compiled under clause 9.2.5;
- (k) compliance by Sydney Water with the Environment Plan under clause 9.3;
- (l) compliance by Sydney Water with the targets in the Energy Management Policy for energy consumption of buildings in clause 9.4.2;
- (m) compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5;
- (n) compliance by Sydney Water with the trade waste objectives and performance indicators under clause 9.7;
- (o) the effectiveness of Sydney Water's internal dispute resolution scheme under clause 12.1;
- (p) the effectiveness of Sydney Water's external dispute resolution scheme under clause 12.2;
- (q) complaints made against Sydney Water to a court or tribunal under clause 12.3; and
- (r) any other matter required by this Licence or the Act to be assessed or considered as part of the Annual audit.

- 10.2.2 Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the Department of Land and Water Conservation and the relevant agency has undertaken an investigation of the matter. However, the Licence Regulator may, as part of the Annual audit:

- (a) report on Sydney Water's implementation of any Memorandum of Understanding referred to in clause 3.3.1;
- (b) satisfy the requirement in clause 10.2.1 to investigate and report on a matter under clause 10.2.1 by including in its report consideration of the findings, the situation at the end of the licence audit period and Sydney Water's response to the findings, of any investigation of the matter by the EPA, NSW Health or the Department of Land and Water Conservation; and

OPERATIONAL AUDITS OF THIS LICENCE CONT.

- (c) request Sydney Water to provide information relating to an investigation of a matter by the EPA, NSW Health or the Department of Land and Water Conservation which is ordinarily within their regulatory activities, in accordance with clause 10.5.
- 10.2.3 The Licence Regulator must ensure that, subject to clause 10.2.2, the report of the Annual audit addresses the matters in clause 10.2.1 and advises the Minister on the following matters:
 - (a) areas in which Sydney Water's performance under this Licence may be improved;
 - (b) any changes to the Licence and the Customer Contract that the Licence Regulator considers necessary;
 - (c) any penalties or remedial action required as a result of Sydney Water's performance under the Licence;
 - (d) whether the Minister should recommend that Sydney Water's Licence be cancelled by the Governor under section 20 of the Act for reasons identified in the annual audit report; and
 - (e) any other matter relating to the annual audit or the Licence Regulator's functions that it considers appropriate.

10.3 Reporting of audit

- 10.3.1 The Licence Regulator must ensure that the report of the Annual audit is presented to the Minister within 1 month after its receipt of the audit under section 32 of the Act.
- 10.3.2 Where the Annual audit report has identified non-compliance with this Licence, in addition to whatever other action is taken or required to be taken, the Minister may require Sydney Water to promptly advertise publicly and notify Customers and Consumers, of the areas in which its performance has not complied, the reasons why and the measures that will be taken by it to address the non-compliance. Such advertisements and notices are to be in a form reasonably acceptable to the Licence Regulator.

10.4 Additional audits

- 10.4.1 The Licence Regulator must initiate additional audits of Sydney Water if required by the Minister.
- 10.4.2 An additional audit may address one or more of the matters in clause 10.2.1 or any other matter required by the Minister.
- 10.4.3 The provisions of this Part applying to the Annual audit will apply equally to additional audits under clause 10.4.1 (all necessary changes having been made), to the extent that those provisions are relevant.

10.5 Provision of Information

- 10.5.1 Sydney Water must provide the Licence Regulator and the person appointed by the Licence Regulator under clause 10.1.2 with all information within its possession or under its control (subject to clause 10.5.4) necessary to the conduct of the Annual audit or an additional audit, including whatever information is requested by the Licence Regulator or the person appointed by the Licence Regulator.
- 10.5.2 The information sought under clause 10.5.1 must be made available within a reasonable time of it being requested.
- 10.5.3 For the purposes of an audit, Sydney Water must, within a reasonable time of being required by the Licence Regulator or a person appointed by the Licence Regulator, permit the Licence Regulator or the person appointed:
 - (a) to have access to any works, premises or offices occupied by Sydney Water;
 - (b) to carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;
 - (c) to take on to or into any such premises, works or offices any other persons or equipment as necessary for the purposes of performing the audit;
 - (d) to inspect and make copies of, and take extracts from, any books and records of Sydney Water that are maintained in relation to the performance of Sydney Water's obligations in accordance with this Licence; and
 - (e) to discuss matters relevant to the audit with Sydney Water's employees.

- 10.5.4 For the purpose of an audit, the information to be provided by Sydney Water or a third party under clause 10.5.5 to the Licence Regulator or the person appointed by the Licence Regulator will include information over which Sydney Water, such a third party or other person claims confidentiality or privilege. The Licence Regulator or the person appointed by the Licence Regulator is required to enter into reasonable arrangements with Sydney Water or such third party to ensure that the confidential or privileged information is kept confidential.
- 10.5.5 If Sydney 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 the Licence Regulator, any such third parties provide information and do the things specified in this Part that extend to Sydney Water as if that third party were Sydney Water.

PRICING

Sydney Water must set the level of fees, charges, and other amounts payable for its services subject to the terms of this Licence, the Act and the maximum prices and methodologies for Sydney Water's Services determined from time to time by IPART.

[Note: Division 8 of Part 6 of the Act governs the nature of fees and charges which may be imposed by Sydney Water. Under the terms of the Independent Pricing and Regulatory Tribunal Act, Sydney Water is a government agency for which IPART has standing reference to conduct investigations and report on the determination of pricing for services supplied and pricing policies.]

DISPUTE RESOLUTION SCHEME

12.1 Internal Dispute Resolution Process

- 12.1.1 Sydney Water must establish internal complaints handling procedures for receiving, responding to and resolving complaints by Customers and Consumers against Sydney Water.
- 12.1.2 The internal complaints handling procedures of Sydney Water must be based on the Australian Standard AS4269-1995 Complaint Handling.
- 12.1.3 Sydney Water must make available to Customers and Consumers information concerning its internal complaints handling procedures which explains how to make a complaint and how the procedure works.
- 12.1.4 Sydney Water must provide information of the nature described in clause 12.1.3 to Customers through their quarterly, or other, bills at least once annually.
- 12.1.5 The Customer complaint handling, complaint resolution process and Customer redress provided to Customers under the Customer Contract must be reviewed and amended where necessary by Sydney Water to ensure that it is based on the Australian Standard AS4269-1995 Complaint Handling.
- 12.1.6 Sydney Water must report each year to the Licence Regulator as part of the Annual audit on the following details concerning complaints made against Sydney Water which are handled by its internal complaints handling process:
 - (a) the number and types of complaints received on a month by month basis, classified by Suburb into one or more of the following categories:
 - (i) water quality, including health and aesthetic parameters;
 - (ii) continuity of water supply;
 - (iii) water pressure;
 - (iv) sewage odour;
 - (v) sewage overflow;
 - (vi) stormwater and drainage services; and
 - (vii) billing including availability charges payable under the Act.

- (b) the number and type of complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be; and
- (c) any problems of a systemic nature arising from the complaints.

12.2 External Dispute Resolution Scheme

- 12.2.1 Within 1 month after the Commencement Date, Sydney Water must establish a Dispute Resolution Scheme for the resolution by a Dispute Resolution Body of disputes between Sydney Water and its Customers and between Sydney Water and Consumers of the nature described in 12.2.3.
- 12.2.2 The Dispute Resolution Scheme so established by Sydney Water is subject to the Minister's approval.
- 12.2.3 The Dispute Resolution Body is to hear disputes relating to complaints made by Customers and Consumers in relation to the following issues:
 - (a) water quality, including health and aesthetic parameters,
 - (b) continuity of water supply,
 - (c) water pressure,
 - (d) sewage odour,
 - (d) sewage overflow,
 - (e) stormwater and drainage services, and
 - (f) billing, including availability charges payable under the Act.
- 12.2.4 The Dispute Resolution Scheme must comply with the minimum standards, so far as applicable, specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes released by the Commonwealth Minister for Customs and Consumer Affairs in August 1997.
- 12.2.5 The Dispute Resolution Scheme must have the following features:
 - (a) the decision-making process of the Dispute Resolution Body and administration of the scheme is to be

	<p>independent from Sydney Water and Subsidiaries of Sydney Water;</p> <p>(b) Sydney Water agrees to abide by the decisions of the Dispute Resolution Body in relation to disputes referred to it for resolution;</p> <p>(c) the Dispute Resolution Scheme must adopt informal proceedings which discourage a legalistic adversarial approach;</p> <p>(d) decisions of the Dispute Resolution Body should be fair and be seen to be fair, by observing the principles of procedural fairness, by making its decisions based upon the information before it, and by having specific criteria upon which its decisions are based;</p> <p>(e) the Dispute Resolution Scheme is to operate efficiently by keeping track of disputes referred to it, ensuring complaints are dealt with by the appropriate process and by the Dispute Resolution Body regularly reviewing the operation of the Dispute Resolution Scheme; and</p> <p>(f) the Dispute Resolution Scheme is to be free of cost to Customers and Consumers and is to be funded by Sydney Water.</p> <p>12.2.6 Sydney Water must prepare a pamphlet that explains how the Dispute Resolution Scheme operates and how it can be accessed.</p> <p>12.2.7 Sydney Water must provide the pamphlet to Customers through their quarterly or other bills, at least once annually.</p> <p>12.2.8 Sydney Water must provide the Licence Regulator with written reports of the determinations made by the Dispute Resolution Body based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. Where considered appropriate by Sydney Water and the Dispute Resolution Body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports.</p> <p>12.2.9 Sydney Water must produce a yearly report to the Licence Regulator based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. The report must contain the following information:</p> <p>(a) how the scheme works,</p> <p>(b) the number and types of complaints received by the Dispute Resolution Body, classified by Suburb into one or more of the following categories:</p> <p>(i) water quality including health and aesthetic parameters;</p> <p>(ii) continuity of water supply;</p> <p>(iii) water pressure;</p> <p>(iv) sewage odour;</p> <p>(v) sewage overflow;</p> <p>(vi) stormwater and drainage services; and</p> <p>(vii) customer billing, including availability charges payable under the Act</p> <p>(c) the outcome of those complaints,</p> <p>(d) the time taken to resolve complaints,</p> <p>(e) the procedure for resolving complaints,</p> <p>(f) any problems of a systemic nature arising from the complaints,</p> <p>(g) any other relevant information required by the Licence Regulator to be included in the report.</p> <p>12.2.10 The report referred in clause 12.2.9 is to be made available to the public free of charge.</p>
	<p>12.3 Complaints to other bodies</p> <p>Sydney Water must report to the Licence Regulator by no later than 1 September each year (for consideration and reporting by the Licence Regulator as part of the Annual audit) on complaints made against Sydney Water to a court or tribunal, such as the Fair Trading Tribunal, (based on information available from these bodies and Sydney Water itself as a party to the complaint) containing the following details:</p> <p>(a) the number and types of complaints received by such other bodies,</p> <p>(b) the outcome of complaints,</p> <p>(c) how the complaints were resolved,</p> <p>(d) any problems of a systemic nature arising from the complaints, and</p> <p>(e) any other relevant information required by the Licence Regulator to be included in the annual report.</p> <p><i>[Note: Section 58 provides that the jurisdiction of the Fair Trading Tribunal under the Consumer Claims Act 1998 extends to the hearing and determination of a consumer claim within the meaning of that Act relating to a service supplied by Sydney Water under a Customer Contract. The Consumer Claims Act provides that any consumer (which would include any Customer) may apply to the Tribunal for determination of a consumer claim.]</i></p>

LIABILITY ISSUES

13.1 Contracting out

- 13.1.1 Sydney Water may contract out the provision, construction, operation, management or maintenance of any of the Systems and Services that are the subject of this Licence in accordance with section 91 of the Act.

[Note: Section 91 of the Act permits Sydney Water to enter into contracts or arrangements with any person for such purposes.]

- 13.1.2 Contracting out under clause 13.1.1 does not relieve Sydney Water of its responsibility to comply with its obligations under this Licence.

13.2 Damage and Compensation to Persons

Sydney Water is required by section 41 of the Act to do as little damage as practicable in exercising its functions under Division 4 of Part 6 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.

13.3 Competitive Neutrality

- 13.3.1 Subject to the Act, the SOC Act and any applicable law, Sydney Water must comply, and must ensure that its Subsidiaries comply, with the competitive neutrality policies and guidelines adopted by New South Wales under clause 3 of the Competition Principles Agreement.

- 13.3.2 This Part is in addition to any obligations of Sydney Water under the *Trade Practices Act 1974* and the *Competition Code* of NSW and other States and Territories as applicable.

[Note: For example Section 46 of the Trade Practices Act 1974 prohibits a corporation that has a substantial degree of power in a market from taking advantage of that power for the purpose of:

- (a) eliminating or substantially damaging a competitor of the corporation or of a body corporate that is related to the corporation in that or any other market;*
- (b) preventing the entry of a person into that or any other market; or*
- (c) deterring or preventing a person from engaging in competitive conduct in that or any other market.]*

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NOTICES

Any notice or other communication given under this Licence is to be made in writing addressed to the intended recipient at the address shown in Schedule 3, or the last address notified by the recipient.

CUSTOMER CONTRACT

The Customer Contract is published as a separate document.

AREA OF OPERATIONS

Areas of Operations means the local government areas specified below, the islands in Sydney Harbour, the deemed areas described below, any special area or deemed special area under section 21 of the *Water Board Act 1987* deemed to be a controlled area by section 88(3) of the Act or any special area, deemed special area or controlled area which continues in force by virtue of Part 2, Schedule 9 of the Act, as well as areas declared from time to time to be controlled in accordance with section 88 of the Act and any variation to the Area of Operations made by the Governor in accordance with section 10 of the Act.

Local Government Areas

Ashfield	Liverpool (City)
Auburn	Manly
Bankstown (City)	Marrickville
Baulkham Hills	Mosman
Blacktown (City)	North Sydney
Blue Mountains (City)	Parramatta (City)
Botany	Penrith (City)
Burwood	Pittwater
Camden	Randwick
Campbelltown (City)	Rockdale
Canterbury	Ryde
Concord	Shellharbour
Drummoyne	South Sydney (City)
Fairfield (City)	Sutherland
Hawkesbury (City)	Strathfield
Holroyd	Sydney (City)
Hornsby	Warringah
Hunter's Hill	Waverley
Hurstville (City)	Willoughby
Kiama	Wingecarribee (Part)
Kogarah	Wollondilly
Ku-ring-gai	Wollongong (City)
Lane Cove	Woollahra
Leichhardt	

Deemed Areas

Any land under the waters of Port Jackson and adjoining the boundaries of the City of Sydney upon which there is erected any wharf, pier, jetty, building, or other structure shall be deemed to be within the Area of Operations of Sydney Water.

[Note: Under section 10(1) of the Act, the Area of Operations for Sydney Water is the same as the area current for the Water Board as at the date of corporatisation. The Area of Operations for the Water Board was identical in extent to the Area of Operations proclaimed under the Metropolitan Water Sewerage & Drainage Board Act 1924.]

ADDRESS FOR NOTICES

Sydney Water Corporation

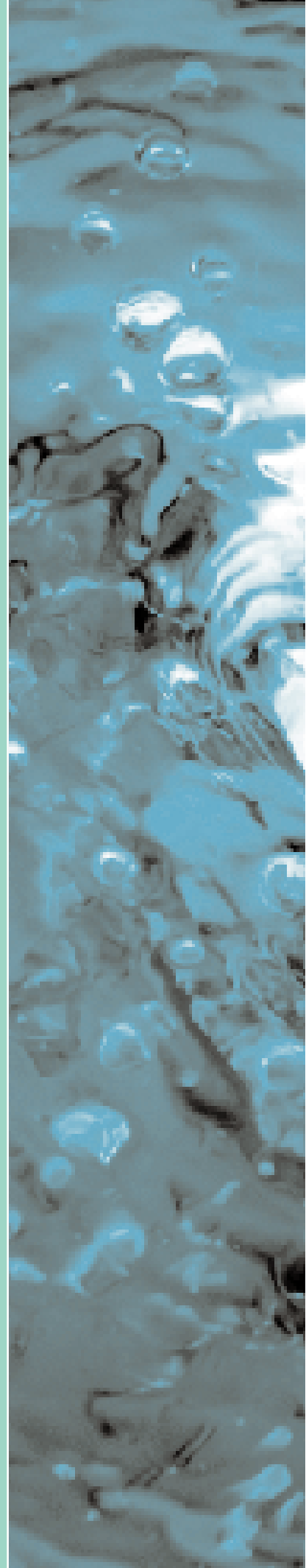
Managing Director
Sydney Water Corporation
115-123 Bathurst St
Sydney NSW 2000

Licence Regulator

The Licence Regulator
Level 6, 29-57 Christie St
St Leonards NSW 2065

SYSTEM PERFORMANCE STANDARDS

Section 1 Licence reference	Section 2 Levels of service	Section 3 Standard	Section 4 How standard is measured
Clause 7.1.1	Drinking Water – continuity	Sydney Water must ensure that, on an annual basis, 95% of all properties connected to its Water supply system will not have that connection affected by an interruption of water supply exceeding 6 hours.	<p>The number of interruptions exceeding 6 + 10 hours divided by total number of properties expressed as a percentage and then subtracted from 100.</p> <p>Where an interruption occurs again in the reporting period, each property is to be counted each time it experiences an interruption, regardless of the number of times the service is so affected.</p> <p>The duration of the interruption is to be measured from the time Sydney Water is advised and ends when the supply to the property is reinstated.</p>
Clause 7.1.1	Drinking water – pressure	<p>Sydney Water must ensure that, on an annual basis, 98% of all properties connected to its Water supply system will have water pressure at the main tap in excess of 15 metres head except in the following low pressure areas:</p> <ul style="list-style-type: none"> • Urban areas adjacent to reservoirs in the Blue Mountains • Non-urban properties in Bayview, West Camden, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains 	<p>The number of instances where pressure is less than 15 metres head (excluding exemptions) divided by total number of properties expressed as a percentage and then subtracted from 100.</p> <p>Where pressure of less than 15 metres head occurs again in the reporting period, each property is to be counted each time, regardless of the number of times the pressure service is so affected.</p>
Clause 7.1.1	Sewage Overflows	Sydney Water must ensure that, on an annual basis, 96% of all properties connected to its Sewerage system will not have their land affected by a sewage overflow on their land from, or as a result of a sewer owned or operated by Sydney Water.	<p>Number of properties affected by a sewage overflow divided by total number of properties, expressed as a percentage and then subtracted from 100.</p> <p>Where a sewage overflow occurs again in the reporting period, the property is to be counted each time it experiences an overflow regardless of the number of times any property is so affected.</p>



APPENDIX C
1999/00 MINISTERIAL DIRECTIVES

Ministerial Directives

Topic	Requirement	Operating Licence Section
Drinking Water Quality	<i>"...I require a status report on the implementation of those actions (proposed in the Improvement Plan to ensure the maintenance of drinking water quality at North Richmond) by the conclusion of the 2000 Annual Drinking Water Quality Improvement Plan period (30 June 2001)."</i>	6
Provision of Sewerage Services	<i>"...To ensure that I remain fully appraised of Sydney Water's progress in reducing the number of unsewered properties, with due consideration to community requirements, environment and public health requirements, I look forward to regular progress reports on this matter."</i>	7
Independent validation of testing methodology	<i>"I note that there is a difference of opinion between the auditor and AWT as to the meaning of the term 'independent validation' and how the process of independent validation should be pursued. So that I may be appraised of developments in this scientific debate, I require regular updates. The first of these updates is to be provided by 31 December 2000. If there is a significant shift in the scientific community I expect to be informed immediately."</i>	9
	<i>"...I require AWT's laboratory to continue to satisfy the NATA requirements to retain accreditation"</i>	9
	<i>"...I require Sydney Water to seek information from NATA in relation to AWT's methodology and processes and provide me with this information by 31 December 2000."</i>	9
Trend in Sewage Treatment Plant Odours	<i>"...I expect the next audit to report a downward trend in odour complaints at these facilities"</i>	12
Customer Council Consultation	<i>"...I require Sydney Water to develop appropriate measures for effective consultation in conjunction with Customer Councils and then enter into discussions with IPART to negotiate their adoption for audit purposes. I require negotiations with IPART to commence by the end of March 2001."</i>	12
Community Consultation	<i>" I require Sydney Water to develop and deploy guidelines and training in effective community consultation. I also require a report by 31 December 2000 on what mechanisms have been put in place to ensure effective community consultation."</i>	12
Asset Management	<i>" I require a report on Sydney Water's strategic framework for asset management. This report is to cover the main components of Sydney Water's asset planning and decision making process, taking into account reviews of system performance standards. The report will also address deployment of this strategy throughout Sydney Water's operations, maintenance and asset creation plans. Progressive development and deployment of detailed asset plans within the strategy is to be undertaken over the following two years from the receipt of the report. I require this report by 31 December 2000."</i>	7
Potable Water Backflow Prevention Devices	<i>"...I require six monthly reports on the progress of the backflow prevention program. I will be looking for a level of assurance that Sydney Water is being diligent in the management of the program. The reports are to be provided to me at the same time as the regular Operating Licence Compliance reports."</i>	8

Ministerial Directives

Topic	Requirement	Operating Licence Section
Customer Service	<i>"...I require the Corporation to develop a suite of performance measures relating to customer service and satisfaction."</i>	5
	<i>"I further require Sydney Water to enter into discussions with IPART to negotiate the adoption of the measures for audit purposes. I require negotiations with IPART to commence by the end of March 2001 with the measures placed on the Sydney Water website within one month of their finalisation and performance reported on that site at least six monthly."</i>	5

APPENDIX D
MEMORANDA OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING BETWEEN

NSW HEALTH AND SYDNEY WATER CORPORATION

***Memorandum of Understanding between
NSW Health and Sydney Water Corporation***

NSW HEALTH DEPARTMENT

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SHPN: (EH) 010017
ISBN: 0 7347 3262 7

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March 2001

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Introduction

This is the Memorandum of Understanding (MOU) which was executed by the NSW Health Department and the Sydney Water Corporation on 11 November 1997, incorporating the amendments made to that MOU by agreement between those agencies signed 21 November 2000.

Memorandum of understanding

Memorandum of Understanding between the NSW Health Department (the Department) of the one part and the Sydney Water Corporation (the Corporation) of the other part.

This Memorandum was entered into on the 21 day of November 1997, and incorporates amendments made to that MOU by agreement between the NSW Health Department and the Sydney Water Corporation dated 21 November 2000.

Context

- A.** The Corporation is a statutory state owned corporation (SOC) under the *State Owned Corporations Act 1989*. The Corporation has a responsibility to supply safe drinking water to its customers in accordance with its Operating Licence granted under the *Sydney Water Act 1994*.
- B.** The Department has a role in providing advice to the Government on standards in relation to drinking water quality and to commit the Corporation to supplying water which is safe to drink having regard to public health.
- C.** The Minister for Health and the Director-General of the Department have certain responsibilities in relation to the protection of public health under the *Public Health Act 1991* and other relevant legislation. The Department's roles and responsibilities as outlined in this Memorandum are in addition to any functions conferred upon the Department, the Director-General of the Department, the Chief Health Officer of the Department or the Minister for Health under the *Public Health Act 1991*.

- D.** The objective of this Memorandum is to formally set out the terms of a cooperative relationship between the parties, establish their respective roles, facilitate fulfilment of each party's function in relation to the protection of public health, and to fulfil the requirements of section 35 of the *Act* and the Corporation's Operating Licence.
- E.** It is recognised that the Independent Pricing and Regulatory Tribunal has a role as the Operating Licence regulator for Sydney Water and in setting the Corporation's prices for services which takes into account community preferences including their willingness to pay or accept risk.

1. Interpretation

- 1.1 Unless otherwise specified, terms in this Memorandum shall have the same meaning as provided by the *Act* or the Operating Licence.
- 1.2 '*Act*' means the *Sydney Water Act 1994*.
- 1.3 'Water supply system' includes all the infrastructure, from the Sydney Catchment Authority's delivery point to the Corporation to the consumer's point of connection and utilised by the Corporation to supply drinking water in the Licence Area.
- 1.4 'Guideline exceedances' means water quality monitoring results which exceed the *NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996*.
- 1.5 'Significant and major incidents' means those incidents which are required to be reported to the Department through the Corporation's incident management plans.
- 1.6 Headings and numbering are for convenience only and do not affect the interpretation of this Memorandum.

2. Regulatory agency

- 2.1 The Director-General of the Department is specified as a 'regulatory agency' under section 34 of the *Act*. The *Corporation's Act* and Operating Licence requires it to enter into a Memorandum of Understanding with the Department. For clarification, it is agreed that the Department will fulfil the Director-General's responsibilities under the *Act* and the Department shall act as the regulatory agency in accordance with this Memorandum.
- 2.2 The Department's public water supply regulatory program will consist of the requirements contained within this MOU.

3. Term

- 3.1 The term of this Memorandum shall be for the period commencing on the date of execution hereof and remaining in force for the term of the Corporation's Operating Licence.

4. Liaison between the Corporation and the Department

- 4.1 A Strategic Liaison Group consisting of the Director-General of the Department and the Managing Director of the Corporation and senior officers nominated by them shall meet regularly to discuss the broad principles, directions and policies underlying the roles and responsibilities of the parties under this Memorandum and to:
 - annually review progress on the implementation of this Memorandum.
 - consider long term strategic issues and policies and to define and implement processes for the interchange of strategic planning information.
- 4.2 A Joint Operational Group shall meet regularly to:
 - coordinate implementation of this Memorandum.
 - establish data sharing programs.
 - establish programs of investigations, feasibility studies and economic analyses to be undertaken by the Corporation to meet changing public health objectives in relation to drinking water.
 - make recommendations to the Strategic Liaison Group regarding the updating of this Memorandum.
 - facilitate coordination of the collection of data on water quality for use by all relevant agencies.

The Joint Operational Group may establish ad hoc joint working parties to investigate and formulate recommendations on specific and technical issues, as required.

- 4.3 The Membership of the Joint Operational Group (unless otherwise agreed between the parties) will be as follows:

Corporation

- Regulatory management representative
- Water quality management representative
- Water operational management representative
- Corporate representative

Department

- Manager, Water Unit
- Policy Advisers, Water Unit

The Corporation and Department may invite other officers to attend in support of specific issues.

5. Dispute resolution

- 5.1** Where a dispute between the parties cannot be resolved by the Joint Operational Group, or the Strategic Liaison Group, then it should be referred to the Chief Executive Officers for resolution. In the event that the dispute cannot be resolved by the Chief Executive Officers, the view of the Department shall prevail.

6. Amendment

- 6.1** This Memorandum can be amended at any time upon agreement between the parties and in accordance with section 36 of the *Act*. Where agreement is not reached, the view of the Department is to prevail in accordance with section 35(3) of the *Act*.
- 6.2** Where the Corporation's Operating Licence is amended and the effect of the amendment is to create a conflict between the Licence and the Memorandum, then the parties shall meet to discuss the implications of the amendment and steps that can be taken by the Corporation to resolve any public health issues that may arise.

7. Corporation's roles and responsibilities

- 7.1** The Corporation shall ensure that all drinking water it supplies is safe to drink having regard to the health of the public and that it is supplied in accordance with its Operating Licence.
- 7.2** The Corporation's Operating Licence requires it to comply with the following relating to drinking water:
- (a) the *NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996* ('1996 Guidelines') relating to health guideline values
 - (b) any amendments, updates or supplements of the *1996 Guidelines* ('updated Guidelines') relating to health guideline values specified by NSW Health

- (c) the aesthetic guideline values of the *1996 Guidelines* specified by the NSW Minister for Health following consultation with the Minister responsible for the Corporation
- (d) the aesthetic guideline values of any updated Guidelines specified by the NSW Minister for Health following consultation with the Minister responsible for the Corporation.

- 7.2.2** The Corporation's Operating Licence requires that other grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee.

- 7.2.3** Sydney Water is to have regard to the concepts of risk minimisation practices and system management of public water supplies referred to in the *1996 Guidelines* and any updated Guidelines, when conducting its water supply system activities.

- 7.3** The Corporation shall establish and use an internal complaints handling procedure for receiving, responding to, investigating and resolving customer complaints regarding water quality.

- 7.4** The Corporation shall consult with the Department in relation to planning issues that arise from changes in the *NHMRC and ARMCANZ Australian Drinking Water Guidelines* from time to time.

- 7.5** The Corporation shall prepare, to the satisfaction of the Department, a comprehensive Annual Drinking Water Quality Monitoring Plan for the water supply system by 31 March each year. The Corporation shall submit this Plan to the Department for review and approval no later than 31st January each year. The Department shall determine its approval no later than 28th February each year. The monitoring plan shall:

- a) include the health and aesthetic parameters for which compliance is required under clause 7.2 of this MOU.

- b) monitor drinking water quality for the aesthetic parameters as required in clause 7.2 of this MOU.
- c) be based on a statistically valid sampling program which meets the intent of the *1996 Guidelines* and any updated Guidelines.
- d) include monitoring locations such that the sampling results are representative of water supplied to Customers and Consumers.
- e) require that samples be tested in accordance with the testing requirements of the 20th edition of *Standard Methods for the Examination of Water and Wastewater* published by the American Public Health Association or other established methods as appropriate.

The Corporation shall carry out a monitoring program in accordance with the monitoring plan. Initially, the Corporation must undertake drinking water quality monitoring for the period 1 January 2000 to 30 June 2001 and after that for each subsequent financial year.

- 7.6** The Corporation shall maintain an effective system of quality assurance for monitoring, sampling, testing, reporting and other processes in relation to the water supply system in consultation with the Department.
- 7.7** The Corporation shall submit to the Department:
- a) on a quarterly basis, monitoring results as agreed in the monitoring plan together with an evaluation of the results on an exception basis.
 - b) on a financial-year basis and by 30 November each year:
 - the results of the health and aesthetic parameters for which compliance is required under clause 7.2 of this MOU.
 - the results of the aesthetic guideline values of the *1996 Guidelines* that apply to the physical characteristics of drinking water.
 - the results should be accompanied by the Corporation's analysis of conditions relevant to the interpretation of data or system descriptions indicating potential health-related problems, together with an evaluation of the results on an exception basis.

- a summary of monitoring information (including guideline exceedances), indicating water quality trends and problems, and a summary of significant and major water quality incidents required to be reported to the Department through the Corporation's Drinking Water Quality Incident Management Plan provided under 10.3. The summary is to include action taken to resolve those exceedances with the potential to impact on public health, and information as to how public health was protected during those exceedances.

- c) the fourth quarterly report required in 7.7(a) can be included as a part of the annual report provided under 7.7(b).
- d) by 31 March in each year, unless otherwise specified following the Mid-term review of Sydney Water's Operating Licence, the Corporation must prepare, to the satisfaction of the Department, an Annual Water Quality Improvement Plan for the water supply system. This Plan is to incorporate system and operational changes needed to address problems identified through water quality monitoring data and through periodic system inspections and evaluations.

- 7.8** The Corporation will develop a system to provide on line access to test results for regulatory agencies during incidents.
- 7.9** The Corporation or its authorised agent shall fluoridate all drinking water supplies as required by the *Fluoridation of Public Water Supplies Act 1957*. Fluoride shall be sampled and reported in accordance with the requirements of the *Fluoridation of Public Water Supplies Act 1957*.
- 7.10** The Corporation shall review with the Department its strategies for the comprehensive management of public health issues no less frequently than every five years, or whenever changes occur that substantially alter the basis of the existing strategies. Strategies to be submitted for review include:
- a) The Five-Year Drinking Water Quality Management Plan
 - b) The 20 year Water Strategy
 - c) Wastewater disposal and reuse strategy.

7.11 The Corporation shall provide the Department with all data and all information on the planning, design, maintenance, operation and administration of the Corporation's activities that the Department reasonably requires to make informed judgements regarding matters relating to the protection of public health.

7.12 The Corporation's responsibilities under this Memorandum apply to the whole of the Corporation's operations (including the whole of its water supply system), including those operations which are performed on behalf of the Corporation by a third party. Protocols are to be established between the Corporation and third parties to ensure the effective operation of the requirements of this Memorandum of Understanding. Such protocols are to include, but not be limited to, joint procedures and training for the identification and notification of information and events of public health significance and the responses described in Clause 10.

7.13 The Corporation shall allow officers of the Department to enter any premises under its care and control, including facilities performing water supply, wastewater reticulation, treatment and disposal systems and wastewater reclamation and reuse systems for the purposes of carrying out any inspections or viewing any records which the Department reasonably requires to make informed judgements regarding matters relating to the protection of public health.

7.14 The Corporation, as a service provider, has a role in ensuring public health protection. This role must be recognised in any conflict or matters of mutual concern to both public health and environmental protection approaches, and will require consultation between the Corporation, the NSW Environment Protection Authority and the Department. The Corporation must meet the environmental water quality requirements for any discharges or water releases required by licences issued to it by the EPA or the Department of Land and Water Conservation.

8. Department's role and responsibilities

8.1 The Department shall provide advice to the Corporation on matters regarding the supply of water which is safe to drink and on other public health issues in regard to water which relate to the Corporation's activities.

8.2 The Department shall provide advice to the Corporation on wastewater management activities that impact on public health, where appropriate.

8.3 The Department shall make independent judgements on public health matters related to the Corporation's activities and exercising its powers and functions under the *Public Health Act 1991*.

8.4 Where any drinking water supplied by the Corporation is failing to meet the Drinking Water Guidelines which the Corporation is required by clause 7.2 to meet, or where the provision of drinking water, or the reclamation, reuse, disposal, or treatment of wastewater takes place in such a manner that a hazard to public health may arise, the Corporation shall be responsible for assessing the problem and proposing rectification action. If the Department is of the opinion that it is appropriate to do so, it may provide advice on rectification action that may be taken by the Corporation. Where the Department gives any advice to the Corporation under this clause, it shall be entirely the responsibility of the Corporation to take appropriate rectification action to ensure that: the drinking water it supplies is safe to drink and meets the requirements of the Corporation's Operating Licence and clause 7.2 and that other activities are conducted in a manner that do not pose a potential hazard to public health. For the purposes of this exercise, the Department will use the *1996 Guidelines* or any updated Guidelines in providing such advice in relation to drinking water.

- 8.5** The Department shall report to IPART upon the Corporation's compliance with the provisions of this Memorandum and upon any public health matters related to the Corporation's operations, as required by IPART or as considered appropriate by the Department, to enable IPART to carry out its functions under the *Act*.

9. Emerging public health issues related to water

- 9.1** The parties shall cooperatively exchange information and the Corporation shall participate in appropriate research and development on emerging public health issues related to drinking water so as to enable them to make well informed judgements regarding action to be taken in relation to the Corporation's water supply system to maintain the protection of public health.
- 9.2** The parties shall independently provide input to public discussion and debate on future revisions of the *1996 Australian Drinking Water Guidelines*, and on guidelines for other grades of water.

10. Events of public health significance

- 10.1** The Corporation shall immediately report to the Department any information or event within its drinking water supply system, or within its wastewater reclamation and reuse and wastewater reticulation, treatment and disposal operations which may have significant implications for public health.
- 10.2** The report of information by the Corporation will include maps depicting geographical locations and systems in addition to tables or text if required by the Department.
- 10.3** The Corporation shall, in consultation with the Department and other Government agencies where appropriate, maintain and update the Corporation's Drinking Water Quality Incident Management Plan.

- 10.4** The Corporation shall, in consultation with the Department and other Government agencies where appropriate, develop and deploy incident management plans/protocols covering the Corporation's activities relating to waste water management.

- 10.5** The parties shall nominate a 24 hour incident management contact point for the coordination of responses to any event of public health significance. That contact point will be an officer of each organisation who has been trained in the plans and incident management procedures and protocols thereunder. The incident management plans shall contain or incorporate by reference, procedures and protocols for the coordinated management of incidents including media and stakeholder liaison and any notification of public health advice from the Department.

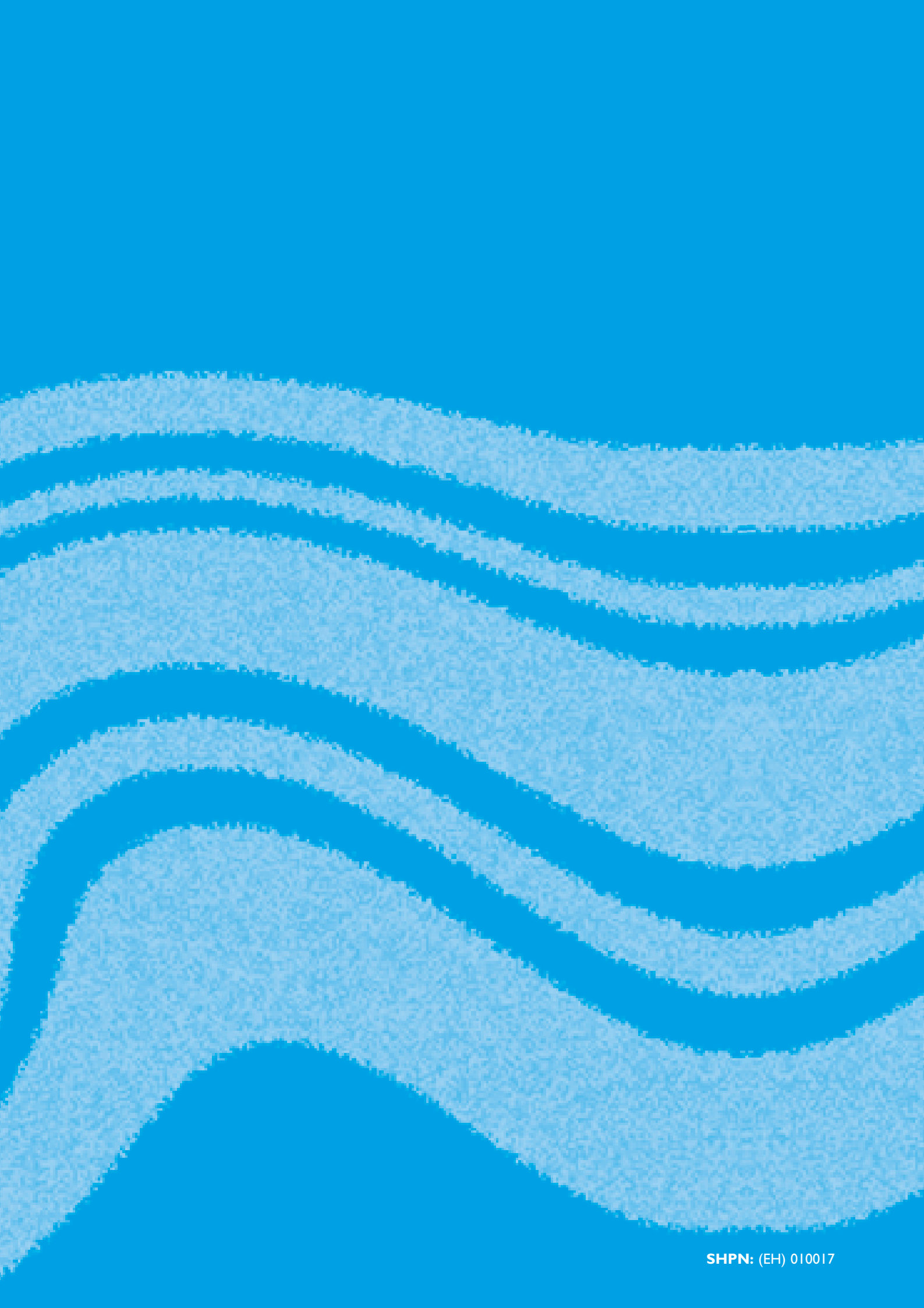
- 10.6** The parties shall ensure that all relevant personnel in their respective organisations are trained to respond to and execute the incident management plans and that appropriate training exercises are jointly developed and conducted.

11. Data exchange

- 11.1** The Department will provide the Corporation with reports and studies it undertakes which are relevant to those activities of the Corporation which impact on public health.
- 11.2** The Corporation will provide reports and studies undertaken by the Corporation as part of its business which are relevant to public health.

12. Public education and information

- 12.1** The Department and the Corporation shall jointly undertake a public education program relating to the health aspects of drinking water.
- 12.2** The Corporation shall report to the public in accordance with section 6.4 of its Operating Licence.



MEMORANDUM
OF
UNDERSTANDING

Between

SYDNEY WATER CORPORATION LIMITED

and the

WATER ADMINISTRATION
MINISTERIAL CORPORATION

MEMORANDUM OF UNDERSTANDING

*Between SYDNEY WATER CORPORATION LIMITED
and the WATER ADMINISTRATION MINISTERIAL CORPORATION*

PREAMBLE

This Memorandum of Understanding (MOU) sets out the intended relationship between the Water Administration Ministerial Corporation ("the Ministerial Corporation"), as manager of the State's water resources, and the Sydney Water Corporation Limited ACN 063 279 649 ("Sydney Water"), as the primary user of water within the region which includes, but is not limited to, the Hawkesbury-Nepean, Woronora and Shoalhaven River systems. This agreement will address issues relating to the use and management of both surface and groundwater resources pending the development of a Water Use Licence. The necessary involvement of the Environment Protection Authority (EPA) is acknowledged in developing key components of a Water Use Licence.

It is recognised that a range of rights and interests in water exist and will continue to exist within these river systems. They include the rights of Sydney Water and the Department of Land and Water Conservation ("the Department"), as agent for the Ministerial Corporation, as well as the rights and interests of the community, the environment and other water extractors licensed by the Department under the Water Act, 1912.

The Council of Australian Government's water reform framework requires reforms in a number of areas: institutional role separation; consumption based cost recovery pricing; comprehensive water allocation systems; trading in water entitlements; effective performance monitoring; integrated natural resource management; stormwater and wastewater reuse; and groundwater management. Several of these elements are important components of this MOU.

The New South Wales Government's 1995 water reform package introduced water pricing reform including the introduction of a Resource Management Charge (\$1.80/megalitre for urban water authorities); and introduced processes to achieve improved flow and water quality outcomes for the State's river systems.

A key part of the reform package was the appointment of the Commissioner for Healthy Rivers who will lead independent inquiry processes into the State's catchments. The Government has identified the Hawkesbury-Nepean as a priority catchment. Recommendations by the Healthy Rivers Commission, as adopted by the Government, may require amendment of the MOU, particularly in regard to establishment of environmental flow requirements below the Corporation's storages.

This MOU represents a step in the process of further formal role separation and of formally defining the rights and accountabilities of Sydney Water in relation to access to, use and management of water resources and the duties and obligations of the Ministerial Corporation in relation to management of the State's water resources. The MOU will be the foundation for the development of a Water Use Licence to be issued by the Ministerial Corporation. The Water Use Licence will specify Sydney Water's rights and obligations, as well as the criteria by which Sydney Water's water resource management performance is to be assessed.

The parties acknowledge that to draft a licence which formalises and specifies the rights and obligations of Sydney Water in these river systems, and to give effect to the policies and obligations mentioned above, better information is needed on the characteristics and behaviour of critical elements of the water resources and the impacts of operations of Sydney Water and other water users.

Consequently, the parties agree to undertake a program of studies and reporting, to be jointly undertaken and jointly resourced, so as to determine the current condition and future management of the water resources. The impact of Sydney Water's operations and the activities of others will be assessed, as well as any potential modifications to those operations and activities to protect the environmental and social values of the resources. In undertaking this work the paramount responsibilities of Sydney Water to meet the water supply needs of the community, the commercial requirements of government, environmental obligations and the needs of the broader community are recognised, as are the duties and obligations of the Ministerial Corporation.

In addition to the Water Use Licence, management plans will provide the framework within which the rights, obligations, and accountabilities of the Department, Sydney Water and others whose activities have an impact upon water resources in these valleys will be established. It is the intention of the Department to develop valley water management plans for extraction of water from the river systems and groundwater resources described above. These plans will be developed in consultation with Sydney Water and other relevant parties, particularly the EPA.

1. INTRODUCTION AND PURPOSE

This MOU sets out the relationship between the Ministerial Corporation and Sydney Water consistent with sections 34-36 of the Water Board (Corporatisation) Act 1994 and clause 1.6 of the Sydney Water Operating Licence. The purpose of this MOU is to form the basis of cooperative relationships between the signatories, including agreed areas of study and data exchange. This MOU can be amended subject to the provisions of section 36 of the Water Board (Corporatisation) Act.

This MOU will continue until 31 December 1999 (as specified in clause 1.6 of the Sydney Water Operating Licence) unless it is replaced with a Water Use Licence. It is intended by the Ministerial Corporation that a licence will be issued following the mid term review of the Operating Licence.

This MOU and any subsequent Water Use Licence will be conjunctive to, and consistent with, the Water Board (Corporatisation) Act, 1994, Operating Licence and Memoranda of Understanding with the EPA and Department of Health.

2. PRINCIPLES

- 2.1 Sydney Water and the Ministerial Corporation will act in accordance with the requirements of this MOU.
- 2.2 In accordance with sections 12 and 90 of the Water Board (Corporatisation) Act, 1994, Sydney Water may exercise the right to the use and flow, and to the control, of water vested in the Ministerial Corporation by section 12 of the Water Administration Act, 1986.
- 2.3 The existing rights exercised by Sydney Water to operate works which divert, impound, or extract water from surface or sub-surface sources, as transferred to Sydney Water, are acknowledged and agreed.
- 2.4 It is agreed that Sydney Water will manage its day-to-day operations without intervention by the Department except as provided by Section 4 of this MOU.
- 2.5 Sydney Water agrees, during the term of this MOU, to exercise its rights and to operate its works consistent with sustaining the value of water and related resources and with protecting the rights of other water users and the general community.

3. COOPERATIVE ACTIONS

3.1 Objectives

- 3.1.1 To ensure that the water resources and related resources which are, or may be, affected by Sydney Water's operations are allocated and used efficiently in ways consistent with environmental requirements and to provide the maximum long term benefit to Sydney Water's customers and the State generally.

- 3.1.2 To provide a safe, secure and reliable supply of water for Sydney Water's customers.
- 3.1.3 To assist Sydney Water to operate in a commercial manner consistent with community, environmental and statutory requirements.
- 3.1.4 To support ecologically sustainable water and associated environments.
- 3.1.5 To achieve flood operations procedures that best meet the requirements of the community, the environment and the Dams Safety Committee.
- 3.1.6 To assist Sydney Water to meet its obligations under the Water Board (Corporatisation) Act and Operating Licence, as related to water resources.
- 3.1.7 To undertake such activities as are necessary to enable consideration of the issue of a Water Use Licence after the mid-term Operating Licence review.

3.2 *Program of Studies, Reporting and Review*

- 3.2.1 The program of studies, as set out in the Schedule, will be jointly supervised by the Department and Sydney Water to meet the implementation plan as shown in the Schedule.

The assistance of the EPA, the Hawkesbury-Nepean Catchment Management Trust and other organisations or individuals will be sought for specific elements of the program of studies and/or reference panels that may be established to oversee specific elements of the program of studies.

- 3.2.2 This MOU, and any licence issued, will be reviewed and will have incorporated, through structures and processes identified in section 5, adopted recommendations or endorsed outcomes from:
 - the studies and investigations listed in the Schedule,
 - Healthy Rivers Commission reports,
 - the EIS for environmental flows identified in the Operating Licence

- 3.2.3 Sydney Water will report on the progress of the program of studies and investigations as part of the operational audits required by clause 5.6 of its Operating Licence.

3.3 *Data Exchange*

- 3.3.1 Any data/information (including historical data), required by either organisation which is over and above that required for the respective organisations' purposes ie. Sydney Water's business interests or the Department's regulatory/resource management interests that directly affect Sydney Water, will be at a cost to be negotiated. Such cost might cover any additional work, reprocessing or reformatting of data/information.

All other data/information for those river systems which are the subject of this MOU collected or produced by the either organisation will be provided at no cost.

3.3.2 Commercial and intellectual property rights are to be maintained and protected. These provisions are to extend to third parties such as consultants who may be given access to the information as part of work commissioned by either agency.

3.3.3 All flow data, and such water quality data as agreed for release by the EPA, collected by each organisation is to be exchanged at 3 monthly intervals, to an agreed computer compatible format, where possible. Subject to mutual agreement, historical hydrological data will be provided for specific purposes.

3.3.4 All requests for and despatches of data/studies/reports will be through a nominated single point in each organisation.

3.3.5 The parties will implement a data use agreement by March, 1997 which provides guidelines concerning release of data within agencies, to third party agencies, and to the public, and the resolution of disputes regarding the exchange of data.

4. **RIGHTS AND OBLIGATIONS OF SIGNATORIES**

4.1 **Joint Rights and Obligations**

The parties will enter into an agreement by March 1997, which defines the heads of consideration to guide preparation of the Water Use Licence. These heads of consideration will include water management charges and obligations to downstream water users and the environment.

4.2 **Sydney Water's Rights and Obligations**

4.2.1 Sydney Water's rights to store and extract water from, and to make discharges to, those water resources subject to sections 12 and 90 of the Water Board (Corporatisation) Act, 1994, and to operate the Warragamba flood gates to conform to the H14 Operating Regime, are agreed.

4.2.2 In accordance with clause 5.10 of the Sydney Water Operating Licence, Sydney Water will operate its water storages with the aim of ensuring a flow of 50 megalitres of water per day over Penrith Weir.

4.2.3 Until a Water Use licence is issued, Sydney Water shall also release sufficient water from the Tallowa Dam storage to enable the Shoalhaven City Council to meet its actual requirements for water at Burrier or the amount that would be available if Tallowa Dam did not exist, whichever is the lesser.

4.2.4 Water released from Sydney Water's storages to meet these requirements shall be managed, as far as practicable, to minimise adverse riverine and environmental impacts, to minimise risks to public safety and to minimise risks to property.

- 4.2.5 Sydney Water will keep the Department informed of any activities which would impact upon the Department's role as the State's water manager. In particular, Sydney Water will inform the Department if it intends to depart from the system management and operation regimes defined in Schedule S1 such that there is a net impact on the resource.

4.3 Water Administration Ministerial Corporation's Rights and Obligations

- 4.3.1 It is acknowledged that the Ministerial Corporation does not have the direct power to control or manage the following activities which could impact on the management of water and related resources:

- existing land use activities
- land use planning and development
- point and diffuse pollutant sources.

However the Ministerial Corporation, through its Department, undertakes with Sydney Water to influence water and land use activities in order to minimise adverse effects on the quality of water entering the water resources described by this MOU.

- 4.3.2 The Department and Sydney Water will consult with the EPA, the Department of Urban Affairs and Planning, the Hawkesbury-Nepean Catchment Management Trust, NSW Fisheries and such other bodies as may be appropriate to determine options to deal better with and coordinate actions required to fulfil this MOU.

- 4.3.3 The Department will undertake to assess the number of water users, both licensed and unlicensed, currently extracting from the water resources described by this MOU, determine the annual volumes being extracted, assess the number and extent of dormant licences, and assign priorities and conditions for allocations to licensed extractors in varying climatic regimes.

- 4.3.4 The Department will review the effect of its current water management policies, including pricing, on the viability of effluent reuse for irrigation and other purposes to replace river water extraction. This assessment will include an exploration of options to improve the viability of reuse proposals.

5. STRUCTURES AND PROCESSES

- 5.1 An agreed framework is needed to address issues and conflicts not specifically covered by this MOU, and the following groups will constitute such a framework.

5.2 Strategic Liaison Group (SLG)

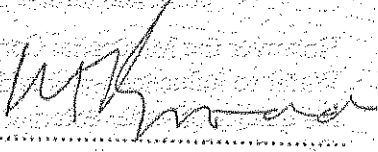
A group will be established to consider longer term issues and policies and to define processes for collection and exchange of planning information. The group would meet twice per year or more frequently if required by either party. The concepts and approaches agreed by the SLG will provide a frame of reference for review of the Department's and Sydney Water's operational outcomes.

5.3 Operational Review Group (ORG)

This group will be established to review data collection and sharing arrangements, monitor the program of studies, and to address issues referred to it by the Strategic Liaison Group.

This Memorandum of Understanding is made at Sydney on the 23 day of December 1996.


SIGNED for and on behalf of
SYDNEY WATER CORPORATION LIMITED
ACN 063 279 649


PAUL A BROAD
(Managing Director)

WITNESS to the above signature:

Name: A. A. DODDS

Address: SYDNEY WATER CORPORATION LIMITED



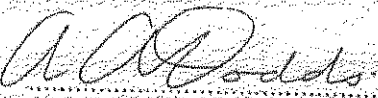
SIGNED for and on behalf of
WATER ADMINISTRATION MINISTERIAL
CORPORATION FOR THE STATE OF
NEW SOUTH WALES


ROBERT SMITH
(Acting Director-General)

WITNESS to the above signature:

Name: A. A. DODDS

Address: SYDNEY WATER CORPORATION LIMITED



SCHEDULE

AGREED PROGRAM OF STUDIES TO BE CONDUCTED AND JOINTLY RESOURCED BY SYDNEY WATER CORPORATION LIMITED AND THE DEPARTMENT OF LAND AND WATER CONSERVATION

S 1 System Management and Operations

This study is to be developed in three parts.

- SWC to provide details of its current water supply operations, predicted requirements and planning criteria
- DLWC to define its potential licence requirements for water abstraction by SWC
- DLWC and SWC to identify options for meeting any inconsistencies between these operations and the potential licence requirements.

The SWC's current operations will be set out in a brief report covering the following aspects;

- background to the current water supply including factors affecting planning and reliability of supply, and the features of the bulk supply system
- commercial and regulatory factors affecting bulk water supply
- main drivers of gross water demand and trends
- managing demand
- options for the future

This report to be completed by 31 March 1997.

The DLWC's potential licence requirements are to cover matters to be subject of the licence, and the current legal status of these requirements or their potential legal status. This report to be completed by 31 March 1997.

SWC and DLWC to jointly identify inconsistencies and means for their resolution, and joint areas for future action.

This report to be concluded by 30 April 1997.

S 2 Flood Operations

Phase One of this study has been to review flood operation strategies for the existing Warragamba Dam so as to best meet the requirements of the community and the environment, consistent with meeting legislated dam safety requirements.

The review has identified a potential flood operation regime (the FORECAST procedure) which may mitigate downstream impacts of small to relatively large floods.

Phase Two involves further assessment of the FORECAST procedure with particular regard to the following:

1. The sensitivity of improved downstream flood management to assumptions made about drawdown of the storage
2. The upstream environmental impacts of the changed gate operations
3. The downstream environmental impacts of the changed gate operations
4. The impact of the changed gate operations on the duration of flooding, warning times and the timing of dam releases with downstream tributary flows
5. The impact of the changed gates operations on the safety of the dam in terms of Imminent Failure Flood, Probable Maximum Flood and the Annual Exceedance Probability of the Imminent Failure Flood.
6. The potential interaction of changed gate operations with other future management options for the storage.

Phase Two investigations are to be undertaken by Sydney Water Corporation in consultation with the Ministerial Corporation. The outcomes of these investigations are expected to contribute to the recommendations to the Government from the proposed Hawkesbury Nepean Flood Management Advisory Committee.

This report to be completed no later than end 1997

S 3 Riverine and Ecological Water Needs

The objective of this study is to contribute to the development of the water release requirements for the natural systems of the Hawkesbury-Nepean, Woronora and Shoalhaven Rivers.

The processes to determine the riverine and ecological water needs of these rivers will be by way of:

- setting of interim environmental flow objectives by the Government.
- the assessment process undertaken by the Commission for Healthy Rivers
- the environment impact statement for environmental flows that Sydney Water is preparing as part of its Operating Licence.
- in the case of the Shoalhaven River, the assessment will consider the requirements and implications of Shoalhaven City Council's proposed water supply augmentation

To facilitate the above processes, the Department and Sydney Water will jointly identify a program of experimental releases and agreed monitoring of environmental flows. The program will satisfy the requirements for environmental impact assessment and the timing, size and duration of the releases may be subject to rules to maintain the security of the water supply.

For the Hawkesbury Nepean River, this program will be developed by 31 March 1997 for trial, initially over the subsequent 12 months, subject to regulatory approvals.

For the Shoalhaven and Woronora Rivers, programs will be developed by 30 April 1997 for trial, initially over the subsequent 12 months, subject to regulatory approvals.

The above experimental release programs will be modified in response to the objectives for environmental flows endorsed by the Government as a result of the inquiry of the Healthy River Commission or the Interim Objective setting process.

S4 Other Water Extractors

The objective of this study is to review the activities of other extractors, both licensed and unlicensed, from the water resources defined in this Agreement. The Department will assess the numbers of water users; the annual volumes being extracted; the number and extent of dormant licences; and whether the current level of use is sustainable. Finally, it will assign priorities for allocations to licensed extractors in varying climatic regimes, and will report on the suitability of existing water management policies and procedures, and on options for improvements to these.

The first study to be undertaken will focus on the Hawkesbury-Nepean River.

A remote sensing study, using GIS techniques to locate and measure irrigated areas and farm dams, is largely complete. This information is being checked through field inspections and then will be used to estimate water use and available water resources in each sub-catchment.

An amnesty to help identify and address unauthorised use has been put in place and applications under it are currently being assessed.

A hydrology study has been undertaken by Webb McKeown to construct the natural and current flow duration curves for nominated gauging sites around the catchment. This is complete and is being used to assess the impact of water use. Further hydrology studies are underway to enable estimation of flows (50th -100th percentile range) at selected ungauged sites. This study will be completed by June 1997.

An (IQM) daily streamflow model will be developed for the Hawkesbury Nepean system in two stages: Stage 1 - Hawkesbury-Nepean below major storages and including major tributaries. Stage 2 - Tributaries above major storages. This will provide a water planning and management tool to assess the cumulative impact of different levels of extraction rates, pumping restrictions, and storage and STP releases on flow regimes. The development of this model will be integrated with other related modelling work for the river.

This study will be completed by end 1998.

Stressed rivers classifications which will assist in determining appropriate River Flow Objectives and associated pumping restrictions will be determined for all major tributaries of Hawkesbury-Nepean based on following criteria:

- Level of water use relative to low flow regimes
- Potential for future growth in use
- Evidence of environmental stress

This study will be completed by end 1997.

An assessment of the hydrological impact of farm dams in selected sub catchments will be undertaken in terms of impact on total yield, storm runoff and groundwater/baseflow contributions.

This study will be completed by end 1997.

S5 Other Studies

The need for other studies to be undertaken may be identified during the course of the work described above. In such cases an agreed project brief and assignment of responsibilities are to be completed as soon as possible after the identification of the study need.

**MEMORANDUM OF UNDERSTANDING
BETWEEN
SYDNEY WATER CORPORATION
AND
ENVIRONMENT PROTECTION AUTHORITY**



Memorandum of Understanding Between Sydney Water Corporation and the Environment Protection Authority

Published by:

Environment Protection Authority

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ISBN 0 7310 3826 6

EPA 96/121

December 1996

Introduction

This Memorandum of Understanding was prepared by the Environment Protection Authority and the Sydney Water Corporation, in keeping with the requirements of the Water Board (Corporatisation) Act 1994. Section 35 of the Act requires the Corporation to enter into a separate Memorandum of Understanding with each of its regulators, including the Environment Protection Authority.

The Memorandum of Understanding is designed to facilitate effective interaction between our two organisations and ensure environment protection, restoration and enhancement at the least overall cost to the community.

The Memorandum outlines the:

- * principles governing the responsibilities and accountabilities of Sydney Water Corporation Limited and the Environment Protection Authority
- * regulatory framework and instruments for environment protection
- * consultative processes between the EPA and SWC to consider operational and regulatory issues and longer term strategic planning
- * data sharing arrangements, and
- * dispute resolution mechanisms.

The EPA exhibited a draft Memorandum for public comment in August 1996. The comments and submissions received were considered by the EPA, in consultation with Sydney Water, and resulted in a number of amendments to the terms of the draft Memorandum of Understanding.

The Memorandum of Understanding was executed in Sydney on 26 November 1996.

**MEMORANDUM OF UNDERSTANDING
BETWEEN
SYDNEY WATER CORPORATION
AND ENVIRONMENT PROTECTION AUTHORITY**

1. INTRODUCTION

- 1.1 This Memorandum of Understanding (MOU) sets the framework for interaction between the NSW Environment Protection Authority (EPA) as the environmental regulator and the Sydney Water Corporation Limited ACN 063 279 649 (Sydney Water) as a major operator in the field of water and sewerage provision and some drainage services.
- 1.2 The EPA has the responsibility to protect the environment in NSW taking into account community values, scientific and expert knowledge, best practice environmental regulation and economic considerations. As such, it develops environmental policy and programs, carries out regulatory functions and provides environmental education.
- 1.3 Sydney Water's accountabilities are to operate at least as efficiently as any comparable business supplying potable water; transporting wastewater; treating wastewater; recycling effluent; returning effluent, biosolids and other treatment byproducts to the environment; providing some drainage and stormwater services; and providing related products and services, in line with its Operating Licence and Customer Contract and relevant legislation.

2. PURPOSE

The purpose of this MOU between the Chief Executive Officers (CEOs) of Sydney Water and the EPA is:

- 2.1 To facilitate effective interaction between the two organisations;
- 2.2 To provide an agreed set of principles which guide the responsibilities and accountabilities of the two organisations, identify regulatory approaches and encourage a mix of regulatory, economic and educational instruments to assess and enhance environmental performance;
- 2.3 To set out effective processes and cooperative arrangements between Sydney Water and the EPA to achieve sound environmental outcomes in the context of the commercial operations of the Corporation; and
- 2.4 To provide a sound platform upon which to progress the achievement of environmental goals relevant to Sydney Water's operations.
- 2.5 This Memorandum accords with the requirements of the EPA's and SWC's governing legislation and, accordingly, it is not necessary to restate all the specific provisions

here. Also, nothing in this Memorandum alters any legislative obligation imposed on Sydney Water or the EPA, for example, under the *State Owned Corporations Act 1989*, *Water Board (Corporatisation) Act 1994* (WBC Act), environment protection legislation as defined in Section 3 (1) of the *Protection of the Environment Administration Act 1991* (POEA Act), or instruments issued pursuant to that legislation.

3. TERM

- 3.1 The duration of the MOU will be consistent with and expire at the same time as the Operating Licence granted to Sydney Water by the Governor.

4. PRINCIPLES

4.1 Responsibilities and accountabilities

- 4.1.1 Each organisation will manage its activities to meet its objectives as set out in Section 21 (1) of the WBC Act and Section 6 (1) of the POEA Act.

Sydney Water's principal objectives are to be a successful business, protect the environment by operating according to the principles of ecologically sustainable development and to protect public health by supplying safe drinking water.

The EPA's principal objectives are to protect and enhance the environment having regard to ecologically sustainable development and to reduce the risks to human health and prevent degradation of the environment.

- 4.1.2 It is recognised both organisations have a public health charter. Mutually supportive approaches, consistent with public health and environment protection objectives should be developed accordingly, in consultation with the NSW Department of Health.

- 4.1.3 Sydney Water is subject to an Operating Licence (which is distinct from pollution control licences), and compliance with aspects of the Operating Licence are audited separately by the Licence Regulator, a statutory body established under the WBC Act. The EPA agrees to verify information provided by Sydney Water to the Licence Regulator pertaining to matters relating to the EPA's interaction with and regulation of Sydney Water.

4.2 Regulatory Framework

- 4.2.1 Sydney Water must comply with all relevant requirements of NSW environmental law. *(Sydney Water currently operates water treatment plants and wastewater treatment systems and holds pollution control licences under the Pollution Control Act 1970 and licences and certificates of registration under the Waste Minimisation and Management Act. By these means, Sydney Water is subject to EPA regulation of the operation of its plants and systems. Sydney Water has also applied for licences under*

the Pollution Control Act for the operation of overflow points in its sewerage systems).

- 4.2.2 The EPA will apply the environmental regulatory framework equally to Sydney Water and other dischargers in terms of the application of regulations, licence fee systems, and other relevant matters. The maximum prices and pricing methodology for Sydney Water's services are determined from time to time by the NSW Independent Pricing and Regulatory Tribunal.
- 4.2.3 The EPA will endeavour to base its regulatory decisions on environmental outcomes, rather than relying merely on inputs or technology-based standards. Notwithstanding, it is acknowledged by both parties that while performance-based regulation is the goal, in the short term, technology-based limits may need to be utilised where environmental outcomes are not easily defined or measured and where environmental risks may be significant.

Licence Conditions and Monitoring

- 4.2.4 Compliance monitoring and reporting by Sydney Water is to be undertaken as specified in licences, approvals and certificates of registration issued by the EPA. Compliance with relevant environmental legislation and requirements in EPA licence conditions, approvals and certificates of registration will be independently audited by the EPA.
- 4.2.5 Licence, approval and certificate of registration conditions should make reasonable provision for unforeseeable emergency conditions.
- 4.2.6 For existing STPs, licence conditions should reflect the capability of the installed facilities; longer term PRPs¹ are to be used in upgrading that capability where warranted, consistent with environmental needs and agreed system-based priorities. Licence conditions for new STPs will recognise environmental, social and economic needs.
- 4.2.7 Litigation, where warranted, will be conducted by the EPA in line with the EPA's *Prosecution Guidelines*.

1. Pollution Reduction Programs (PRPs) are negotiated with licensees to allow strategically focussed environmental improvement programs to be implemented over a longer period than the annual licence.

Water Quality and Quantity

- 4.2.8 The EPA and Sydney Water recognise the importance of having water quality objectives which are linked to river flow objectives and which set the context for both catchment plans and for environmental regulation.

The Government has established a two stage process for setting these water quality and river flow objectives. Interim water quality and river flow objectives will be set by Government, based on advice coordinated by the EPA. The EPA agrees to consult Sydney Water in the development of this advice. The Government has established an

independent public inquiry process under Section 23 of the *Pollution Control Act* to provide more detailed advice to Government. Both the EPA and Sydney Water will participate actively in this public inquiry process and take action to achieve the Government's set water quality objectives and river flow objectives.

4.2.9 Sections 23-27 of the WBC Act impose obligations on Sydney Water to conduct ecological risk assessments. The Act imposes requirements on the EPA to approve methodologies and set pollution reduction targets for scheduled substances. The Act requires Sydney Water to meet pollution targets set by the EPA for reduction of substances listed in Schedule 10 of the Act. Determination by the EPA of the targets will take into account, as far as possible, relevant water quality and flow objectives. Similarly, Sydney Water's requirement to conduct an Environmental Impact Statement on environmental flows in the Hawkesbury-Nepean, Shoalhaven and Woronora rivers (Operating Licence clause 1.6) will be coordinated with the framework described in 4.2.8 above for water quality objectives and river flow objectives.

4.2.10 To ensure consistent understanding between the two organisations, the terms "environmental values", "criteria", "guidelines" and "standards" are defined as in the glossary of the *Australian Water Quality Guidelines for Fresh and Marine Waters* printed by ANZECC in 1992 (which are currently being reviewed). The legal definitions of the *NSW National Environment Protection Council Act* relating to national environment protection measures will also apply.

4.3 Instruments of Environment Protection

4.3.1 Interactions between Sydney Water and the EPA are intended to ensure environmental protection, restoration and enhancement at least overall cost to the community viz. that there is an overall net benefit to society taking into account the environmental, social and economic needs of current and future generations. To this end, the full range of regulatory, education and economic tools need to be considered in designing regulatory frameworks to achieve identified environmental goals and prioritise works.

4.3.2 Both organisations encourage environmental management on a catchment basis, taking into account diffuse and point source pollution.

4.3.3 The linkages between potable water management, wastewater management and the natural water cycle should be considered in applying regulatory regimes, as well as in designing the water and wastewater system.

4.3.4 It is recognised that water is a valuable resource and effluent reuse will be an integral part of effective water cycle management, wherever possible, and will be promoted. In pursuing increased reuse, public health must not be compromised, the environment must be protected and the activity must be commercially viable in the long term. The principles also apply to biosolids and other treatment byproducts.

4.3.5 The operation of the water, wastewater and drainage systems and the regulation of those systems should include the consideration of risk management principles and the costs and benefits of environmental objectives.

4.3.6 Where any price paid by Sydney Water's customers is to have a non-cost-reflective "environmental tax" component (e.g. for trade waste), the EPA will be primarily responsible for advising the Government on the level of this component (but will consult with Sydney Water on the effect on customers).

4.3.7 Both the EPA and Sydney Water are concerned to ensure that toxic substances and substances which may cause harm to the environment do not enter the environment through the sewerage system. It is recognised that some substances in the sewer are sourced from domestic or diffuse sources as well as from industrial sources discharging trade waste for treatment. For those substances to be discharged to the system Sydney Water will be responsible for determining whether the best, most cost effective way of meeting Sydney Water's licence conditions is through source control or additional levels of treatment. The EPA has responsibility for determining pollution reduction targets to effect significant reductions of Schedule 10 substances by 30 June 2000 and ensuring that the licence conditions it attaches are conducive to Sydney Water meeting or exceeding the targets.

5. STRUCTURES AND PROCESSES

5.1 The environmental regulatory regime is defined in environment protection legislation. In many cases, the timeframes specified in relevant environment protection legislation do not coincide with the timeframes established for operation of a State Owned Corporation or for determining necessary long term capital investment programs.

The Operating Licence establishes a 5 year timeframe while the separate pollution control licences are limited to an annual timeframe by statute. As a result an agreed framework for defining the environmental requirements to be applied to Sydney Water is needed to allow for a longer term strategic planning focus. Such a framework is outlined below.

5.2 CEO Meetings

Regular CEO level meetings will establish and confirm the broad principles, directions and policies underlying investigations and negotiations between the EPA and Sydney Water and will address any major issues referred by either the Strategic Liaison Group or the Operational Policy Committee (the responsibilities of which are set out below). Meetings of CEOs can be called by either party as required.

All agreements that are formally ratified by the CEOs between Sydney Water and the EPA will be in the public domain.

5.3 Strategic Liaison Group (SLG)

The Strategic Liaison Group has been established to consider longer term strategic issues and policies and to define and implement processes for the interchange of strategic planning information. The Group will also assist in the development of innovative regulatory approaches as they affect Sydney Water.

The SLG is to maintain a longer term perspective. It is to provide a forum for consideration of strategic environmental issues and options for improving interaction between the EPA and Sydney Water in relation to licensed operations, pollution prevention and control strategies, taking into account the principles upon which this MOU is based. The SLG will have the capacity to establish data sharing programs and joint investigations and studies to assist it in carrying out its functions and may establish special Working Groups as required. The concepts and approaches agreed by the SLG will provide a frame of reference for providing detailed development of operational policy.

The SLG will also consider regulatory approaches being considered by the EPA involving third parties where the impact of those decisions will affect Sydney Water's operations (e.g. a decision by the EPA to regulate stormwater discharges has the potential to increase discharge to the Corporation's systems).

If required, the SLG will consider overall and relative priorities arising from Pollution Reduction Programs (PRPs) negotiated by regional directors of the EPA and relevant Sydney Water officers (see Section 5.4).

5.3.1 Membership of the SLG will depend on the issues but will normally include:

From Sydney Water:

- Group General Manager TransWater;
- General Manager Corporate Services;
- Group General Manager Utilities;
- Manager Waste Water Systems Planning; and
- Manager Environment Branch.

From the EPA:

- Assistant Director General;
- Executive Director Operations;
- Director Environmental Policy
- Director Economics and Environmental Reporting; and
- Director Environmental Science.

The above list of members can be altered unilaterally to reflect changes of title or structure within the EPA or Sydney Water. The SLG is at liberty to invite other officers to attend meetings, as necessary.

5.3.2 Meetings of the SLG can be called by either party but will usually be held at least twice yearly. The meetings will be chaired alternately by the EPA and Sydney Water. The SLG will be entitled to consider issues raised by either party.

5.4 Operational Policy Committee (OPC)

The Operational Policy Committee (formerly known as Joint Officers Committee) has been established to consider operational and regulatory issues. Its principal responsibilities will be to:

- ensure a consistent approach to the regulation of Sydney Water facilities

including the renewal of pollution control licences and negotiation of PRPs

- EPA Regional Directors will finalise the PRPs negotiated with Sydney Water officers. PRPs so finalised will then be considered to be agreed when endorsed by one of the following Sydney Water managers:
 - Group General Manager Utilities; or
 - Group General Manager TransWater; or
 - the Managing Director.

5.4.1 Unresolved matters of significance, which may include those arising out of the process of negotiating PRPs, will be referred to the SLG for consideration.

5.4.2 The OPC will consist of senior officers of both organisations. While attendance may vary from meeting to meeting as required, there will be alternate chairing of meetings by the Executive Director Operations (EPA) and Manager Ocean Wastewater (Sydney Water). The OPC will meet approximately six times per year. Both organisations will seek to ensure continuity of representation.

5.5 The interactions of the OPC and SLG and related investigations and negotiations must be carried out in a way that does not compromise the independence of the EPA nor the community's confidence in environmental regulation.

5.6 Sydney Water may need to seek submissions from the EPA from time to time to assist it in meeting requirements under the WBC Act or Operating Licence. Sydney Water will endeavour to provide adequate timeframes for review and comment. The EPA will endeavour to respond to requests for comment on such submissions within the established timeframe. If, in the opinion of either the Director-General of the EPA or the Managing Director of Sydney Water, it is felt there is a risk of either party not complying with the spirit of these obligations, such concern is to be conveyed in writing.

5.7 Open Communication

The EPA and Sydney Water are committed to open communication and consultation with the community on key strategic issues affecting the regulation of Sydney Water, for example, load-based licensing and sewer overflow licensing. Opportunities will be provided for this through appropriate existing forums such as the EPA's State Community Consultation Forum and Sydney Water's Customer Councils.

6. DATA SHARING

6.1 Compliance data will be made available by Sydney Water to the EPA in line with EPA licence requirements and the conditions of the Corporation's Act and Operating Licence. This will include:

- Publication of an annual environment report (Clause 5.12 and Section 14(1)(d) of the WBC Act) which includes reporting against:
 - monitoring of the environmental indicators (Operating Licence clauses

5.11 and 5.12);

- the pollution reduction targets set in accordance with Section 23 of the WBC Act (and the results of the Ecological Risk Assessments required to be compiled under that section);
 - progress of achievement of Sydney Water's "special objectives" set out in Section 22(7) of the WBC Act;
 - Sydney Water's progress against targets for reducing the amount of water drawn from storages; and
 - Sydney Water's performance against the trade waste objectives.
- Any monitoring required by conditions of pollution control licences or by notice.

6.2 Other data gathered or collated by the Corporation may also be available to the EPA depending upon circumstances. In reaching a decision as to whether data can be provided, the following matters need to be considered:

- (i) whether the data has been gathered by Australian Water Technologies (Sydney Water's trading arm) for an external client;
- (ii) whether the data requested is commercially confidential;
- (iii) whether the data requested is still in draft form or is "raw data", not having been quality controlled.

Disputes between the EPA and Sydney Water as to the availability of data that has not been quality controlled will be referred to the SLG for resolution, or to the CEOs, if necessary.

6.3 Where data are:

- not related to Sydney Water's compliance; and
- have a commercial value;

Sydney Water could expect payment for the data or may supply the data free of charge, subject to negotiations. Where negotiations are required, they are to be completed expeditiously.

6.4 The EPA will be similarly expected to share data gathered by it with Sydney Water, subject also to points (ii) and (iii) in 6.2 above. Subject to the same provisos as in Clause 6.3, the EPA could expect payment for the data or may supply the data free of charge, subject to negotiations which should be completed expeditiously.

6.5 It is noted that the Strategic Liaison Group has the capacity to establish data sharing arrangements (see 5.3 above).

- 6.6 This MOU does not affect the operation of section 26 of the *Pollution Control Act* relating to the disclosure of information or section 32 of the *Freedom of Information Act* concerning documents affecting business affairs, or any other relevant statutory requirement relating to the disclosure of information.

7. **DISPUTE RESOLUTION**

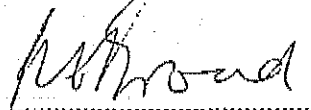
Where an issue or matter of long term strategic significance cannot be resolved by the OPC, the matter is to be referred to the SLG for further consideration. Such matters unresolved by the SLG will be referred to CEO level for resolution.

8. **AMENDMENT**

Any amendments to this MOU are required under Section 36 of the *Water Board (Corporatisation) Act 1994* to be publicly exhibited.

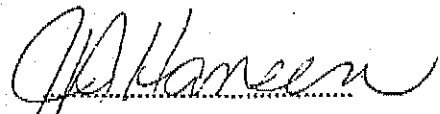
This Memorandum of Understanding is made at Sydney on the 24 day of November 1996.

SIGNED for and on behalf of
SYDNEY WATER CORPORATION LIMITED
ACN 063 279 649 ("the Corporation")

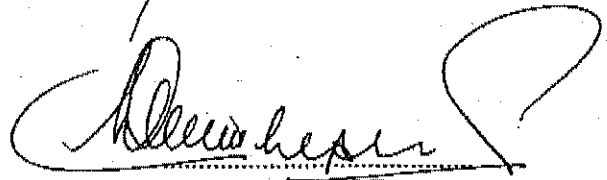

.....
PAUL A BROAD
(Managing Director)

WITNESS to the above signature:

Name: JA Hansen
Address: Sydney Water Corporation

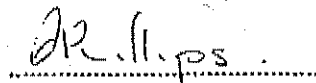

.....

SIGNED for and on behalf of
ENVIRONMENT PROTECTION AUTHORITY
("the Regulatory Agency")


.....
NEIL SHEPHERD
(Director-General)

WITNESS to the above signature:

Name: Lorraine Phillips
Address: 12/2A Forsyth St
Glebe NSW 2037


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APPENDIX E
MOU COMPLIANCE TABLES

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
1	The MOU provided was executed on the 26 November 1996, that is, prior to a number of significant developments including Sydney's water crisis, McClellan Findings, operation of the Protection of Environmental Operations Act, 1997 though (MOU appears to reflect the PEOA Act), Water Legislation Amendment (Drinking Water and Corporate Structure) Act, 1998, and the creation of the Sydney Catchment Authority.	<p>No requirement.</p> <p>The Sydney Water - EPA MOU has not been amended (subsequent to its original signing in November, 1996) nor reviewed in light of the intervening legislative or operational changes. Over the audit period, two "workshops" have been conducted with the aim of reviewing the relationship between Sydney Water and EPA. The issue of reviewing the MOU was raised and acknowledged in these workshops. References in MOU to operational responsibilities now controlled by Sydney Catchment Authority (SCA) also require updating.</p> <p>An opportunity to reflect a "co-operative relationship" is the development of an MOU that is consistent with the requirements of the Operating Licence.</p>
2.1	To facilitate "effective interaction" between the two organisations.	<p>"Effective interaction" has not been maintained over the audit period.</p> <p>Relationship between Sydney Water - EPA faltered through the audit period. Sydney Water's Licence appeal to the Land and Environment Court (against EPA's sewerage treatment system licence) resulted in the cessation of the Strategic Liaison Group (SLG) meetings. Resolution of the Licence has subsequently seen SLG meetings reactivated and a Sydney Water - EPA relationship plan drafted.</p> <p>The "Purpose" of MOU (e.g. "effective interaction") differs to Licence requirement (for "co-operative relationship"). Definition of "relationship" in a revised MOU could assist (including scope and roles of "Regulator" and "Regulatee") and reflect EPA's role to gain Sydney Water's commitment to environment improvements.</p>
2.2	To provide an agreed set of principles which guide the two organisations to, identify regulatory approaches and encourage a mixture (regulatory, economic, educational instruments) to assess and enhance environmental performance.	No requirement, though benefit is seen in developing a succinct statement on the agreed principles to guide the organisations relationship.
2.3	To set out effective processes and co-operative arrangements to achieve sound environmental outcomes in the context of the commercial operations of the corporation.	Cooperative arrangements are evident through the Strategic Liaison Group (SLG) and Operational Policy Committee (OPC). OPC meets more regularly than SLG and discusses issues and achievements. Sample minutes of both OPC and SLG were sighted.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
		<p>A Works Program and Statement of Corporate Intent have been formulated.</p> <p>In cooperation with EPA, Sydney Water has developed a process and timeframe for its capital investment priorities.</p>
2.4	To provide a sound platform under which to progress the achievements of the environmental goals relevant to Sydney Water's operations.	<p>Performance requirement met.</p> <p>Waterplan 21 has been reviewed. Latest environmental goals and outcomes have been incorporated into Environmental Plan and an Annual Report of Environmental Performance.</p> <p>Environmental objectives are set in the Sydney Water Act and reiterated in the reporting of environmental performance. Also link between Sydney Water environmental performance and EPA's State of the Environment (SoE) in reporting has been established.</p>
2.5	This MOU accords with the requirements of the EPA and Sydney Water's governing legislation or any other obligation.	MOU is not in accord with current legislation, e.g. numerous references are made to issues that are now fall under the responsibilities of SCA and the MOU fails to acknowledge intervening legislation.
3.1	The MOU is consistent with and expires at the same time as the Operating Licence granted to Sydney Water.	<p>Performance requirement not met.</p> <p>MOU signed 26 November 1996 and has not yet been updated nor is it consistent with Sydney Water's Operating Licence in purpose or term. This shortfall has been recognised by Sydney Water and EPA, and the MOU to be revised in "near future" as agreed by both parties at recent workshop meetings.</p>
4.1.2	Mutually supportive approaches, consistent with public health and environmental protection objectives, should be developed accordingly in consultation with the NSW Department of Health.	<p>Low performance achieved.</p> <p>Little direct evidence of supportive approaches at organisation level, though signs of an improving approach are evidenced through agreement (eg; joint workshops / SLG) on strategic issues to be addressed.</p>
4.1.3	EPA to verify information provided by Sydney Water to licence regulator pertaining to EPA's interaction and regulation of Sydney Water.	Verification is largely direct between EPA and Sydney Water rather than via an MOU mechanism (eg; EPA verifies Sydney Water's performance in respect of the environmental indicators developed for the Operating Licence [Environmental Indicators Compliance Report – Special Objectives]. See Volume 7 – Environment: Indicators and

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
		Plans for further detail).
4.2.1	Sydney Water must comply with all relevant requirements of NSW environmental law (ie. licences and certificates of registration under Waste Minimisation and Management Act and licences for the operation of overflow point and sewerage systems).	<p>The following information outlines examples of licences held by Sydney Water. However, compliance assessment is outlined in relevant sections of this report. Licences include:</p> <p>Sydney Water holds licences for 27 Environment Protection Licences for Sewerage Transport and Treatment Systems.</p> <p>Additional licences held: Construction Licence for Bundeena Malabar Sewerage Scheme; Water Filtration Plant Discharge Licences for Cascades & North Richmond; Herbicide Spraying at Rouse Hill.</p> <p>Sighted list of requirements of these licences and degree to which all conditions are being met.</p>
4.2.2	EPA's environmental regulatory framework applied to Sydney Water is the same as other dischargers and the price for the licence fee is determined by the NSW Independent Pricing and Regulatory Tribunal.	<p>Transitional licence fee arrangements have been applied to Sydney Water over four year period whilst Load Based Licensing was being introduced. During this period \$52M of licence fees were incurred by Sydney Water. Subsequent to full implementation of load based licensing (LBL), Sydney Water fees are expected to be in the order of \$6m per annum.</p> <p>IPART's fee determination was not available at time of audit.</p> <p>See also Clause 4.2.4.</p>
4.2.3	EPA will endeavour to base its regulatory decisions on environmental outcomes though, in the short term, technology based limits may be needed as outcomes may not be easily defined or measured or their environmental risk may be significant.	<p>Performance requirement well developed, as exemplified below:</p> <p>Licences are performance (outcome) based. For example, Blue Mountains Sewer Augmentation Scheme is monitored on performance basis (environmental outcomes). Other examples provided Sewer Overflow Licensing Program EIS and EPA's Determining Authority Report on the Sewer Overflow Licensing Program (SOLP). Regulation of discharges consists of combination of performance and technology based requirements.</p> <p>Performance Based example: Bubble Licence for STPs in South Creek catchment which, as a group, have specified load targets for nitrogen and phosphorus discharges to South Creek.</p> <p>Technology Based example: West Camden STP nitrogen discharge targets are set as a result of the plant's</p>

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
		capabilities. Recent upgrades to plant will result in EPA lowering acceptable total nitrogen discharges.
4.2.4	EPA undertakes independent audit to monitor and report Sydney Water's compliance with EPA's licence conditions, approvals and certificates of registration.	<p>Performance requirement met as demonstrated through the examples listed below:</p> <p>EPA assessment of overall Sydney Water licence compliance through annual returns on licences (monitoring and compliance information).</p> <p>EPA able to conduct frequent and unannounced "spot checks" of Sydney Water facilities.</p> <p>Sydney Water also conducts its 3-year audit program.</p>
4.2.5	Licence, approval and certificate of registration should make reasonable provisions for unforeseeable emergency conditions.	<p>Performance requirement met.</p> <p>Contingency arrangements for emergencies are provided in Licence conditions and performance standards. Examples provided: Mt. Victoria STP, West Camden STP & Penrith STP. Provisions for limit conditions, wet weather overflows, wet and dry weather bypasses and notification procedures for bypass or overflow incidents.</p> <p>Sydney Water actively identifying gaps between Licence allowances and possible environmental and health risks through STP upgrading schemes etc.</p>
4.2.6	<p>Existing STP licences should reflect the capability of the facility, long term pollution reduction programs and any agreed system based priority.</p> <p>New licence conditions for STP recognise environmental, social and economic needs.</p>	<p>Performance requirement met.</p> <p>Licence conditions stipulate volume/mass limit of discharges (in kL/day) permissible to each STP. Activities must also be carried out according to pollution control approvals and the EPA's Determining Authority Report for the SOLP.</p> <p>EISs conducted on the SOLP and EPA's Determining Authority Report assess key issues including public health, sensitive areas etc.</p> <p>The SOLP EIS findings included in Licence Conditions.</p>
4.2.7	Litigation, where warranted, will be conducted in line with EPA's prosecution guidelines.	Performance requirement met.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
		Sydney Water provided example of prosecution: Helensburgh sewer overflow resulted in an offence against the Environmental Offences and Penalties Act 1989. Prosecution mounted by EPA against Sydney Water (successful).
4.2.8	EPA and Sydney Water recognise water quality objectives linked to river flow objectives and which set the context of both catchment management plans and environmental regulation.	<p>Appropriate Performance requirement under development, as exemplified below:</p> <p>Interim water quality objectives under negotiation. Comments provided by community. Sydney Water implementing a Statement of Joint Intent with EPA subsequent to Healthy Rivers Commission recommendations.</p> <p>River flow objectives under consideration of Hawkesbury Nepean Forum (HNF) established by DLWC. Sydney Water was a party to this forum and also participates in Hawkesbury Nepean Integrated Monitoring Program.</p> <p>Sydney Water participates in catchment boards for Sydney Harbour, Sydney South and South Coast. Water Plan 21 also covers water quality objectives, addresses water quality/quantity interactions etc.</p>
4.2.9	<p>Section 23-27 of the WBC Act proposes obligations on Sydney Water to conduct ecological risk assessments involving the following:</p> <p>EPA to approve methodologies and set pollution reduction targets for scheduled substances.</p> <p>Sydney Water to meet pollution targets set by EPA for reduction of substances listed in Schedule 10 of the Act.</p> <p>Sydney Water's requirement to conduct environmental impacts statements on environmental flows in the Hawkesbury Nepean, Shoalhaven and Woronora rivers (Operating Licence clause 1.6) will be conducted in the framework for water quality objectives and river flow objectives.</p>	<p>Appropriate Performance requirement met as exemplified below:</p> <p>Example provided: "Ecological and human health risk assessment of chemicals in sewage discharges to ocean waters".</p> <p>Environmental Indicators Compliance Report states EPA reporting requirements for identifying substances of potential concern (focussed monitoring of Schedule 10 substances).</p> <p>Study undertaken on Ecological Risk in mid 1990's has led to ecological toxicity testing methodology improvements.</p> <p>EIS for environmental flows responsibility of SCA.</p>
4.2.10	Sydney Water adopts definitions for "environmental	Performance requirement met.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
	values", "criteria", "guidelines" and "standards" as defined in the glossary for <i>Australian Water Quality Guidelines for Fresh and Marine Water</i> (ANZECC, 1992) and <i>NSW National Environment Protection Council Acts</i> definitions relating to national environment protection measures are to be applied.	Evidence provided that definitions are used and applied.
4.3.1	Interaction between Sydney Water and EPA should achieve environmental protection, restoration and enhancement and the least overall cost to the community. Thus, a full range of regulatory, educational and economic tools need to be considered in designing regulatory frameworks to achieve environmental goals and prioritise work.	<p>Performance requirement met.</p> <p>A full range of tools are considered and applied.</p> <p>Example made of South Creek Pilot Scheme where "economic tools" for diffuse sources of pollution used, training schemes developed, community education programs etc.</p>
4.3.2	EPA and Sydney Water encourage environmental management on a catchment basis taking into account diffuse and point source pollution.	<p>Performance requirement met.</p> <p>A Catchment basis is adopted. For example; Sydney Water catchment and receiving water models assist the Government in strategic planning for point and diffuse pollution and environmental flows in Shoalhaven and Hawkesbury Nepean Rivers. Landuse classifications in catchment models are used to predict flow and pollution contributed by diffuse pollution sources.</p> <p>Example provided: South Creek catchment "Engaging diffuse water pollution sources in South Creek – Pilot Trading Scheme". Sydney Water data on discharges up and downstream of point sources used to develop water quality and river flow models and improve understanding of the influence of point and diffuse sources of pollution on river health.</p>
4.3.3	Linkages between potable water management, wastewater management and the natural water cycle should be considered in applying a regulatory regime and in the design of water and wastewater systems.	<p>Performance requirement met.</p> <p>Recognition of natural water cycle and re-use provided though EIS and determination studies for STP upgrades at Rouse Hill, Gerrigong/Gerroa.</p>
4.3.4	Effluent reuse is an integral part of effective water cycle management and should be promoted recognising public	Performance requirement met.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
	health must not be compromised, the environment must be protected and activities must be commercially viable. This will also apply to biosolids and other treatment by-products.	<p>Reuse – EIS for STP upgrades discuss reuse as preferred option for wastewater management. Summary from Operational Policy Committee (OPC) dialogue provided.</p> <p>Guidelines for reuse and economic viability studies included in EIS as is a discussion on public health and environmental protection.</p> <p>Management of by-products and biosolids according to performance based guidelines and monitoring reports sighted. Also, increase use of biosolids in agriculture and landscaping.</p>
4.3.5	Water, waste water and drainage systems operation and regulation should include consideration of risk management principles and the costs and benefits, and environmental objectives.	Performance requirement met and evidence provided through Sewer Overflow Licensing Program (SOLP) where risk management studies and cost/benefit analysis are incorporated to improve performance, identify risks and formulate solutions.
4.3.6	The EPA is primarily responsible for advising the government on any non-cost-reflective “environmental tax” component.	<p>Performance requirement met as demonstrated through Sydney Water's actions, exemplified by the following:</p> <ul style="list-style-type: none"> Load based licensing fees gradually introduced to industry over 4 year period.
4.3.7	<p>Sydney Water will be responsible for determining the best and most cost effective way for the Sydney Water's licence condition through source control or additional levels of treatment of domestic or diffuse sources as well as industrial sources discharging trade waste for treatment.</p> <p>EPA is responsible for determining pollution reduction targets for Schedule 10 substances by 30 June 2000 and ensuring licence conditions are conducive to Sydney Water meeting or exceeding the targets.</p>	<p>Performance requirement met.</p> <p>Examples include Trade Waste Policy where pricing is calculated by working backwards from receiving waters at the discharge point, linking to the capability of the STP, and identifying the type of industries that should be allowed to operate in the catchment.</p> <p>Targets for Schedule 10 substances set in Trade Waste Policy and Environmental Indicators Compliance Report . Community Education programs also developed.</p>
5.1	A framework for defining environmental requirements to be applied to the Sydney Water Corporation is needed to allow for a longer term strategic planning focus.	<p>Performance requirement met.</p> <p>Sydney Water indicated difficulty was experienced in clarifying EPA's requirements beyond an annual reporting</p>

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
		framework. However Sydney Water has a 12–18 month “strategic agenda” with EPA including: EPA involvement in Capital Works Planning, IPART 5 year price path review and EPA is in review of Waterplan 21 (SLG Minutes 06/01 & 07/01)
5.2	CEOs at EPA and Sydney Water will meet regularly to establish and confirm broad principles, directions and policies underlying investigations and negotiations and address major issues referred by either the Strategic Liaison Group or the Operational Policy Committee.	Performance requirement met. Whilst the CEO meetings were informal and no minutes taken, a discussion on Workshop issues to be provided (July 2001) was put forward as an example. A meeting schedule was sighted.
5.3a Strategic Liaison Group has been established to consider long term strategic issues, define and implement processes for interchange of planning information or development of innovative regulatory approaches.	Performance requirement not met. A SLG has been in operation over the audit period and focused to strategic issues. However, SLG failed to overcome a hiatus in its operation during an appeal by Sydney Water against EPA’s licence (March/April 2000). A Strategic Agenda has been established through SLG meetings (July 2001) for longer term planning. Data sharing protocols agreed to be working satisfactorily. Interaction with other key regulators identified: NSW Health, DLWC, DUAP and Ministry of Energy and Utilities.
5.3.1	SLG membership nominally involves specific Sydney Water and EPA representatives.	Performance requirement met. Membership of SLG as required by MOU. Other groups invited to attend regarding specific issues.
5.3.2	SGL meetings are usually held at least twice a year and chaired alternatively by EPA and Sydney Water.	Performance requirement met. Meetings held April 2000, March 2001 and July 2001 (closest to Licence period). Chairing arrangements alternated between Sydney Water and EPA.
5.4	Operational Policy Committee (OPC) should meet to resolve operational regulatory issues.	Performance requirement met. Despite difficulties experienced by SLG, the OPC continued to meet regularly. September 2000 meeting minutes sighted.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
5.4.1	Unresolved matters of significance (including negotiations on PRPs) will be referred to the SLG for consideration.	Performance requirement met. Items for discussion and reference to SLG listed in agenda (minutes sighted)
5.4.2	The OPC will consist of senior officers, will be alternatively chaired between EPA and Sydney Water, will meet approximately 6 times a year and both EPA and Sydney Water will seek to ensure continuity of representation.	Performance requirement met. Meetings alternately chaired by Sydney Water and EPA as required. OPC meetings held 6 times in previous 12 months: <ul style="list-style-type: none"> 25/08/01 (Sydney Water) 31/01/01 (EPA) 05/06/01 (EPA) 10/10/00 (Sydney Water) 03/04/01 (Sydney Water) 24/08/00 (EPA)
5.5	The interactions of the OPC and SLG must not compromise the independence of the EPA nor the community's confidence in environmental regulation.	Performance requirement met. EPA's independence remaining eg. Licence appeal.
5.6	Sydney Water may seek EPA submissions to assist meeting its requirement under the Water Board Corporations Act or Operating Licence and in this regard provide a timeframe for review and comment. Further, the CEOs may convey in writing if they are of the view that either party is not complying with the spirit of these obligations.	Performance requirement met. Timeframe for EPA review and comment tabled at SLG 07/01. No assistance sought from EPA over operating period.
5.7	EPA and Sydney Water are committed to open communication and consultation with the community on key strategic issues (eg load-based licensing and sewer overflow licensing) and opportunities are provided through	Performance requirement met; examples outlined below. Public consultation during sewer overflow licensing in accordance with EP&A Act requirements for environmental

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
	existing forums such as EPA's State Community Consultation Forum and Sydney Water's Customer Councils	<p>impact assessments.</p> <p>Sydney Water Corporate Customer Council issued with a presentation regarding pollution reduction targets by EPA.</p> <p>Sydney Water presentations to Illawarra and Northern Customer Councils on WaterPlan 21. All Customer Councils presented with information on Environment Plan. Coastal Councils received presentations on Sydney Water's Biosolids Strategy.</p>
6.1	Compliance data will be made available by Sydney Water to EPA in line with EPA's licensing requirements and conditions of the Corporation's Act and Operating Licence.	<p>Performance requirement met.</p> <p>Data is provided to EPA through Annual Environmental Report – Annual Returns (outlined in Licence, Environment Plan, and Annual Plan).</p>
6.2	Other data gathered or collated by the Corporation may be available to the EPA and, should a dispute arise in the regard to the availability of such data, that it be referred to the SLG or CEO as necessary.	<p>Performance requirement met.</p> <p>Other information is provided to EPA (for example; effluent toxicity data). Sydney Water advised no disputes regarding availability had not arisen. EPA and Sydney Water agree data sharing "is now happening satisfactorily".</p>
6.3	Data not related to Sydney Water's compliance and having a commercial value may be supplied for a charge.	<p>No Requirement.</p> <p>Sydney Water advise no changes were applied to data provision to EPA</p>
6.4	EPA is similarly expected to share data gathered by it in regard to Section 6.2 and 6.3 and to do so free or on a charge though again expeditiously complete negotiations where required.	<p>No Requirement.</p> <p>Data sharing obligations are regarded to be satisfactory according to both parties. Sydney Water was unaware of any data provided by EPA at the time of the audit interview or of any charges that may have been applied.</p>
6.5	The Strategic Liaison Group has the capacity to establish data sharing arrangements,	<p>Performance requirement met.</p> <p>Data sharing issues have been established</p>
6.6	The MOU does not affect disclosure of information (eg	No Requirement.

Table A: MOU EPA Compliance Table

Clause	Requirement	Findings
	under the Pollution Control Act section 26 or under the Freedom of Information Act section 32) concerning documents affecting business affairs.	No matter of information disclosure affected either Act.
7	Matters of long term significance that cannot be resolved by the Operational Policy Committee may be referred to the Strategic Liaison Committee and if such matters remain unresolved these may be referred to the CEO level for resolution.	Performance requirement met. SLG met regarding Licence appeal and referred the matter to the respective CEO. The matter remained unresolved and was the subject of formal appeal. Also stipulated in section 35 of the Act (Licence clause 3.3.1)
8	Any amendment to this MOU be publicly exhibited.	No Requirement. MOU was not amended. As stipulated in section 36 of the Act (Licence clause 3.3.1).

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
Context	This section outlines the particular responsibilities of the Department of Health and the Director General, the Sydney Water Corporation, the role of IPART and establishes the objective of the memorandum set out the terms for a cooperative relationship between the parties, establish the roles and facilitate fulfilment of each party's functions in relation to the protection of public health and fulfil the requirements of Section 35 of the Act and the Corporation's Operating Act.	Structure and obligations of parties identified through formal meetings, information sharing, accountability requirements. Results of McClellan Inquiry successfully adopted. CEOs in attendance at Strategic Liaison Group (SLG) meetings.
1	Interpretation which sets out the meanings of specific terms under the Act or Operating Licence.	No Requirement.
2	The Director General of the Department is specified as a regulatory agency.	The Water Legislation Amendment (Drinking Water and Corporate Structure) Bill 1998 amended the Sydney Water Act and the Health Act to effectively strengthen and clarify NSW Health's powers concerning the safety of drinking water and establish Sydney Water as a Statutory State Owned Corporation.
3.1	The term of this MOU will be from the date of execution thereof and remain enforced for the term of the Corporations' Operating Licence.	Early version of MOU deemed to be valid (by Managing Director) for the term of the interim Operating Licence (ie, 15 June 1999 until 12 April 2000). Further amendments were formulated at June 2000 Joint Operational Group (JOG) and deemed to be an appropriate working document in the interim. Current MOU signed off by Sydney Water and NSW Health on 21 November 2000.
4.1	A Strategic Liaison Group shall meet to discuss broad principles of directions and policy underlying the roles and responsibilities of the party and to: annually review progress on the implementation of this Memorandum; consider long term strategic issues and policies in defined implemented processes for the interchange of strategic planning information.	Examples of meeting minutes held within audit period include: <ul style="list-style-type: none"> - 21 March 2000; - 23 May 2000; - 22 August 2000; - 21 November 2000; - 12 April 2001; - 2 July 2001;

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
		<ul style="list-style-type: none">- 5 September 2001. Annual Performance reviews within audit period (01/01/00 - 30/06/01): <ul style="list-style-type: none">- 01/01/00-31/12/00 “2000 Annual Performance Report”, endorsed by SLG 12/04/01; and- 01/01/00 - 30/06/01 “Performance Report” endorsed by SLG 05/09/01. SLG meets regularly to discuss SCA Operating Licence; Health Act; Annual Performance; monitoring programs; REPs; and emerging water quality issues.
4.2	A Joint Operational Group shall meet to discuss implementation of MOU, data sharing programs, feasibility studies and economic analyses, make recommendations to the SLG and facilitate coordination of water quality data.	JOG meetings held: <ul style="list-style-type: none">- 9 February 2000;- 4 December 2000; and- 4 June 2001. JOG agreed MOU reviews would be achieved through regular updates of Checklist (15/06/99-28/11/00, 01/01/01-30/06/01). JOG meets regularly to discuss online drinking water quality reporting; water strategies; emerging water quality issues; recommendations to SLG (review of MOU 30/06/00); and annual water quality monitoring.
4.3	Membership of the joint operational committees should include Corporation (Regulatory Manager, Water Quality Manager, Water Operations Manager, Corporate Representatives) and Departmental (Manager Water Quality Unit and Policy Advisor Water Quality Unit) members.	Membership of committee noted. Sydney Water: <ul style="list-style-type: none">- Manager, Regulation and Compliance;- Manager, Water Filtration Plants, Asset Manager;- Manager, Product Delivery Water. NSW Health: <ul style="list-style-type: none">- General Manager, Bulk Water;- Manager, Hydrology;- Strategy, Policy and Planning Officer.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
5.1	Disputes between the parties not resolved by the Joint Operational Group or the Strategic Liaison Group should be referred to the CEOs for resolution and if this is unsuccessful the views of the Department shall prevail.	No disputes were forwarded to the JOG for resolution, however, a reporting mechanism is in place
6.1	The MOU can be amended at any time upon agreement of the parties. Where agreement is not reached the Department's view shall prevail.	Amendments to MOU made in June 1999 and November 2000. Changes made to reflect new Operating Licence requirements, responsibilities of SCA and to remove redundant clauses no longer applicable to the MOU. Signed off by Sydney Water CEO. No disagreements requiring involvement of NSW Health.
6.2	Where the Sydney Water's Operating Licence is amended and creates a conflict between the Operating Licence and the MOU then the parties should meet to discuss the implications and steps to resolve any public health issue.	Example provided of inconsistency of water quality guidelines. The amended Licence specifies use of the 1996 Australian Drinking Water Guidelines whereas 1999 MOU specifies the use of the 1980 guidelines. Correspondence supporting the resolution of this anomaly was sighted (letter to R. Birrell dated 09/06/99).
7.1	Sydney Water must ensure all drinking water it supplies is safe for drinking having regard to public health and supplied in accordance with its Operating Licence.	Refer to "Part 6 – Water Quality" for discussion of this area of compliance.
7.2.1	The Corporation's Operating Licence requires it to comply with nominated drinking standards.	Refer to "Part 6 – Water Quality" for discussion of these matters and appropriate guidelines.
7.2.2	The Corporation's Operating Licence requires that other grades of water supplied by Sydney Water must be supplied in accordance with relevant guidelines and requirements as prescribed.	Refer to "Part 6 – Water Quality" for discussion of other grades of water.
7.3	The Corporation shall establish internal complaints handling procedures for resolving customer complaints regarding water quality.	Refer to "Part 12 – Dispute Resolution Scheme" for discussion of customer handling procedures.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
7.4	Sydney Water will consult with the Department in relation to planning issues arising from changes to NHMRC and ARMCANZ Australian Drinking Water Guidelines from time to time.	JOG meeting minutes report that the change from 1980 guidelines to 1996 guidelines. Agenda items include discussion of "emerging water quality issues".
7.5	<p>A comprehensive annual drinking water quality monitoring plan produced by the corporation by 31 March each year.</p> <p>The above plan should be reviewed by the Department of Health for approval no later than 31 January each year.</p> <p>Department of Health shall determine it's approval no later than 28 February each year.</p> <p>[NOTE: The annual drinking water quality monitoring plan has specific requirements set out by the MOU relating to health and aesthetic perimeters.</p> <p>Drinking water qualities statistically valid sampling; monitoring locations and sample testing.</p> <p>Sydney Water shall carry out a monitoring program in accordance with the monitoring plan for the period 1 January 2000 to 30 January 2001 and after that for each subsequent Financial year.]</p>	<p>Annual Drinking Water Quality Monitoring Plan approved by NSW Health 21 March 2000. Approval granted in January 2000.</p> <p>1 January 2000 – 30 June 2000 Drinking Water Quality Monitoring results sighted.</p> <p>1996 NHRMC Health Guideline values adopted for "health parameters".</p> <p>1996 NHRMC ADWG Aesthetic Guideline values adopted for "aesthetic parameters".</p> <p>Sampling locations based on 1996 Guidelines. General sampling locations adopted include:</p> <ul style="list-style-type: none"> - Raw water (outlet main from water filtration plants); - Treated water (outlet main of first reservoir downstream of WFP); - Distribution (consumer's supply – first tap downstream of water meter); and - Consumer supply (as above). <p>Sydney Water contracts Australian Water Technologies (AWT) to perform sampling and analysis. AWT is NATA accredited and test all samples in accordance with the 18th (or later) edition of Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association.</p> <p>Plan covers period 1 January 2000 to 30 June 2001 inclusive as required by the Operating Licence.</p>
7.6	Corporation shall maintain an effective system of quality assurance for monitoring, sampling, testing and reporting and other processes in relation to water quality system in consultation with the department.	<p>Certificate of Registration – Drinking Water Quality Management System ISO9002:1994 #QEC12888. DWQMS certified to ISO9002 (260601) and subject to biannual surveillance audits. Registration expires June 2003.</p> <p>Certificate of Registration – Customer Service and Asset Management Divisions ISO9002:1994 #QEC11419</p>

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
		(Management and Reporting). Registration expires June 2003. AWT operates management system to AS/NZS ISO9001:1994 #6227-20. AWT QA systems certified to ISO9002 and subject to biannual surveillance audits. Registration expires December 2003.
7.7a	Sydney Water shall submit to the Department on a quarterly basis monitoring results as agreed in the monitoring plan together with an evaluation of the results on an exceptions basis.	Quarterly reports sighted for following dates: - 1 October 2000 – 31 December 2000; - 1 January 2001 – 31 March 2001; and - 1 April 2001 – 30 June 2001.
7.7b	On a Financial year basis and by the 30 November submit to the department : - results relating to Health and aesthetic parameters; - guideline values applying to drinking water; - the cooperation's analysis of conditions relevant to interpretation of data or systems indicating potential health problems and an evaluation of results on an exceptions basis; - a summary of monitoring information indicating water quality trends, problems and significant and major water quality incidents (reported through the corporations drinking water quality incident management plan); and a summary of actions to be resolved with respect to exceedences with a potential to impact public health.	Annual Report on Drinking Water Quality 1999/2000 submitted to NSW Health on 30 November 2000.
7.7c	The quarterly reports required in 7.7a can be included as part of the annual report provided under 7.7b	Fourth quarterly report usually replaced by annual report required for that period. Auditors sighted annual report dated 30 November 00 combining quarterly reports sighted in 7.7a.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
7.7d	By the 31 March each year following the mid term review of Sydney Water's operating licence, it must provide an annual water quality improvement plan for the water supply system to the satisfaction of the department and to incorporate systems and operational changes to address problems identified through the water quality monitoring data and periodic system inspection and evaluations.	Annual Drinking Water Quality Improvement Plan has been produced. Mid term review not yet commenced, therefore no requirement for audit period.
7.8	Sydney Water Corporation will develop a system to provide on-line access to test results for regulatory agencies during incidents.	Web access to information including periodic updates, location of site, etc. Data dating from 1 July 2000 available. JOG meeting 1 July 1999 reviewed Interim system for web reporting.
7.9	Sydney Water will fluoridate all drinking water supplies as well as sample and report upon such fluoridation in regard to the Fluoridation of Public Water Supply Act 1957.	Annual Report on Drinking Water Quality 1999/2000 sighted with performance details. Note: The determination of compliance with the requirements of the Fluoridation of Public Water Supplies Act, 1957 is at the discretion of the Fluoridation of Public Water Supplies Advisory Committee. A target of 95% of sample results between 0.90 and 1.5mg/L and no results greater than 1.5mg/L has been agreed between Sydney Water and the NSW Health as an appropriate Performance requirement.
7.10	Sydney Water shall review with departments it's strategy for comprehensive management of public health issues no less frequently than every five (5) years or whenever substantial change exists. Strategy to be submitted for review include: <ul style="list-style-type: none"> - Five (5) year drinking water quality management plan - Twenty (20) year water strategy - Waste water disposal and reuse 	Five-Year Drinking Water Quality Management Plan July 1999 – June 2004 sighted (12 September 2000). "20 Year Water Strategy" presently in Draft format (Feb 2000). Compiled to meet previous MOU requirement 7.10. "Draft Memorandum – Water Quality Issues Associated with Wastewater Disposal" attached to 20 Year Water Strategy. Draft submitted for NSW Health comments (JOG minutes 09/02/00 and 03/04/00).
7.11	Sydney Water shall provide to the department all data recently requested to enable the department to make a	SLG provided with following documentation to inform NSW Health of public health matters:

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
	judgement regarding matters relating to the protection of public health.	<ul style="list-style-type: none"> - Water Quality Education and Information (30/06/99); and - Research and Development (30/06/99). - Obtained from minutes of SLG meetings 23/05/99, 22/08/00 and 21/11/00).
7.12	Sydney Water's responsibilities under this MOU apply to the total system including those performed by third parties and protocols must be established to ensure effective operations of the MOU including joint procedures and training for the identification and notification of information and events of public health significance as described in clause 10.	Procedure for the Communication between Sydney Water Businesses and the Build Own Operate (BOO) Water Filtration Plants; and Sydney Water Corporation and Sydney Catchment Authority Bulk Water Supply Protocol.
7.13	Sydney Water cooperation must allow NSW Health officers entry into any premises for the purpose of carrying out inspections or viewing records to enable judgements regarding matters relating to the protection of public health to be made.	NSW Health officers did not require access to any Sydney Water facilities during the licence period.
7.14	Corporation has a role to ensure public health protection and therefore recognise any conflict of interest on matters of concern to public health or environmental protection and is required to consult with the EPA and the Department of Health as well as meet any environmental water quality requirements for discharges or water releases required by the EPA or Department of Land and Water Conservation.	No conflicts of interests experienced.
8.1	NSW Health to provide advice to Sydney Water on matters regarding the supply of water which is safe to drink and other public health issues.	Provisions for feedback from NSW Health made in Drinking Water Quality Incident Reports (Form A). NSW Health determines which incidents are regarded as threats to public health.
8.2	NSW Health shall provide advice to Sydney Water on waste water management activities impacting public health.	Protocol for reporting of overflows or bypasses that represent a public health concern (1 June 2001). Tabulates event location, volumes etc.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
8.3	NSW Health shall make independent judgement on public health matters and exercise it's powers and functions under the Public Health Act 1991.	NSW Health responsibility.
8.4	Where Sydney Water fails to meet drinking water guidelines will create a hazard to public health (through reclamation, reuse, disposal or treatment of wastewater). The Sydney Water is responsible for assessing the problem and proposing rectification action. NSW Health may provide advice on the rectification plan although Sydney Water shall be entirely responsible to take appropriate rectification action, ensuring the supply of drinking water is safe and other activities do not pose potential health hazard to public health.	No failures. However, procedure for reporting sighted "Drinking Water Quality Incident Report – Form A". NSW Health did not declare any risks to public health as a result of these events.
8.5	NSW Health to report to IPART on Sydney Water's compliance with the MOU, upon any public health matter or as considered appropriate.	NSW Health's report to Egis (PPK) on Sydney Water compliance was deemed as appropriate evidence on behalf of IPART (confirmed with IPART 15/10/01).
9.2	Sydney Water shall make independent input to public discussion debate on revisions of the <i>1996 Australian Drinking Water Guidelines</i> or other grades of water	Sydney Water staff attending public forum on "WSAA R&D Committee, AWA Specialist For a, CRC WQT" with direct input to NHRMC.
10.1	Sydney Water shall immediately report to NSW Health any information or event within drinking water supply or wastewater reclamation that has a significant impact for public health.	Annual Report on Drinking Water Quality to NSW Health 1999-2000 contains summary of significant and major incidents during 1 July 1999 – 30 June 2000. Events or incidents handled in accordance with Sydney Water's "Drinking Water Quality Incident Management Plan". Drinking Water Quality Incident Reports for the Licence period did not result in NSW Health declaring any hazards or risks to public health.
10.2	Sydney Water report of information shall include maps depicting the geographical location and systems in addition	Reporting format meets requirements of NSW Health.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
	to tables or text if required by NSW Health.	
10.3	Sydney Water, in consultation with NSW Health and other agencies shall maintain and update its Drinking Water Quality Incident Management Plan.	JOG meeting minutes 07/08/01 discussed appropriateness of Incident Management Plan. NSW Health and Sydney Water agreed to update as both parties felt appropriate.
10.4	The Sydney Water, in consultation with NSW Health or other government agencies shall, where appropriate, develop and deploy incident management plans / protocols covering Sydney Water's activities relating to waste water management.	JOG meeting minutes 07/08/01 discussed appropriateness of crisis management plan (general guidelines and communications manual). NSW Health and Sydney Water agreed to update as both parties felt appropriate. Various sections of manuals presently under review, many already superseded.
10.5	NSW Health & Sydney Water shall nominate a 24hr incident management contact point for coordinating responses to events of public health significance. The contact point will be an officer of each organisation who is appropriately trained. The incident management plan shall contain references, procedures and protocols for coordination of incident management including media and stakeholder liaison and notification of some NSW Health of public health advice.	<p>Various avenues of communicating level of crisis:</p> <ul style="list-style-type: none"> - General Guidelines; - Communications Manual; and then - Media Manual. <p>Contacts at Sydney Water and other key stakeholders contained within appendix 1 of General Guidelines and page 56 of Communications Manual.</p> <p>Guidelines describe how reporting hierarchy works at different levels (political, media, operational etc) depending on scale of crisis.</p> <p>NSW Health and Sydney Water staff participate in combined training exercises (see Folio 8.42).</p> <p>Notification of crises to NSW Health via incident report forms in Communications Manual. Media notification procedures outlined in Communications Manual also.</p>
10.6	NSW Health & Sydney Water shall ensure all relevant personnel are trained to respond and execute the incident management plan and the appropriate training exercise are	Training requirements and schedules outlined in Folios A.52 and B.42.

Table B: MOU NSW Health Compliance Table

Clause	Requirement	Comment
	jointly developed and conducted.	
11.1	NSW Health to provide Sydney Water with reports and studies relevant to Sydney Water's activities impacting on public health	Although not formally on a regular basis, numerous reports are exchanged at JOG and SLG meetings. For example, "Protocol for Follow-up of Variation in Cryptosporidium and Giardia Test Results" provided June 2001. Other exchanges noted in minutes of meetings.
11.2	The Sydney Water will provide reports and studies to NSW Health undertaken as part of it's business relevant to public health	Although not formally on a regular basis, numerous reports are exchanged at JOG and SLG meetings. For example, "Research and Development – 5 Year Drinking Water Quality Management Plan" presented December 2000. Other exchanges noted in minutes of meetings.
12.1	Sydney Water and NSW Health shall jointly undertake public education programs relating to health aspects of drinking water.	JOG meeting minutes 09/02/00 discuss Water Quality Public Education Program for late 1999. Water Unit of NSW Health to review any articles/notices prepared by Sydney Water. Examples sighted.
12.2	Sydney Water shall report to the public in accordance with 6.4 of its operating licence.	Daily Cryptosporidium/Giardia reports posted on the internet. Annual and Quarterly Drinking Water Quality Reports available on the internet and at Sydney Water Customer Service Centres in hard copy.

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
Pre- amble	The MOU relates to clause 3.3 "Memorandum of Understanding" under the operating licence, which indicates the main purpose of MOU's is to form a basis for "cooperative relationships between the parties".	<p>No Requirement.</p> <p>The existing Preamble identifies some roles for the MOU viz:</p> <ul style="list-style-type: none"> - This agreement will address issues relating to the use of both surface and groundwater pending the development of a water licence; - This MOU represents "a step in the process of further formal role separation and of formally defining the rights and accountabilities of Sydney Water in relation to access to, use and management of water resources and obligations of the Ministerial Corporation in relation to management of the State's water resources." and - The MOU will be the foundation for the development of water use licence to be issued by the Ministerial Corporation. <p>Whilst the above represents important issues at the time of signing, further development to achieve "a cooperative relationship between the parties" (clause 3.3.2) is clearly available.</p> <p>In light of a valid MOU not being in place, compliance on individual clauses has not been assessed, rather, commentary on performance has been provided where appropriate.</p>
Intro and Purpose	<p>The purpose of the MOU is "to form the basis of cooperative relationships between the signatories, including agreed areas of study and data exchange".</p> <p>The MOU will continue until the 31 December 1991 unless it is replaced by the water licence</p>	<p>No Requirement.</p> <p>MOU only valid until 31 December 1999 and has not been replaced nor reviewed since this date. Hence, valid MOU is not in place.</p> <p>Sydney Water has sought to renew its MOU with WMAC however, DLWC assigned a low priority to this task. DLWCs efforts have been directed to implementation of the new Water Management Act.</p> <p>Numerous OPC meetings throughout 2000 to discuss changes including the Act, formation of SCA, etc.</p> <p>Ordinary "interdepartmental meetings" have been held outside of Strategic Liaison Group (SLG) meetings to maintain links between SCA, DLWC and Sydney Water.</p>

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
		<p>Early 2001, Sydney Water approached DLWC to formally update MOU (and also define new scope of relationship, re-activate OPC as a forum for dealing with future issues).</p> <p>Draft MOU was granted executive approval as a “framework” for coordinating contact with DLWC and to streamline relationship. Draft presently being reviewed by Sydney Water and DLWC.</p>
2.1	Sydney Water and WAMC to act in accordance with this MOU	<p>No Requirement.</p> <p>Divestment of previous powers between Sydney Water and SCA has occurred, for example, 3 water extraction licences held with WAMC for North Richmond, Manly Dam and Botany Wetlands.</p>
2.2	Sydney Water may exercise the right to the use and flow, and to the control of water vested in the Ministerial Corporation	<p>No Requirement.</p> <p>"The establishment of the SCA saw the transfer of numerous catchment management responsibilities which were previously regulated by DLWC. DLWC's regulation of Sydney Water is presently limited to regulating Sydney Water's activities at North Richmond, Manly Dam and Botany Wetlands".</p>
2.4	Sydney Water will manage it's day to day operations without intervention of the department (NOTE: the term department is not defined within the MOU that was taken to be the Department of Land and Water Conservation)	<p>No Requirement.</p> <p>This now applies to SCA.</p>
2.5	Sydney Water agrees to exercise its right and to operate its works consistent with sustaining values of water and related resources and with protecting the rights of other users and general communities	<p>Performance requirement met.</p> <p>Protection rights directly addressed in Licence requirements. Demand management and water conservation controlled by the Operating Licence.</p>
3.1.1	Sydney Water's operations will ensure water resources and related resources are allocated and used efficiently, consistent with environmental requirements and provide maximum long term benefit to Sydney Water's customers	<p>Refer to clause 8 and 9 in Operating Licence (distribution, labelling etc).</p> <p>SCA now also responsible for long term benefits.</p>

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
	and the state generally	
3.1.2	Provide safe and secure and reliable supply of water to Sydney's customers	<p>Schedule 2 deals with robustness of supply and demand forecasts.</p> <p>Safety requirements achieved by complying with ANZECC guidelines.</p> <p>Security –bulk water supply agreement, have been established with SCA and complimentary and consistent management plans (including drought planning) developed.</p>
3.1.3	Sydney Water to operate in a commercial manner consistent with community environment and statutory requirements	Outside scope of audit.
3.1.4	To support ecological sustainable water and associated environments	<p>Sustainability report incorporates indicators.</p> <p>See Section 9 - Environment: Indicators and Plans.</p>
3.1.5	To achieve flood operational procedures best method requirements of the community, environment and the dam safety committee	<p>SCA is now responsible for all matters pertaining to Dams and Dam Safety Committee.</p> <p>See Section 7 – System Performance.</p>
3.1.6	Sydney Water to meet its obligations under the Water Board (corporation) Act (now the Sydney Water Act) and the operating licence relating to water resources	<p>Annual Operational Audits and internal audits available.</p> <p>SCA now responsible for most matters pertaining to water resources, however, Sydney Water reports to DLWC on effluent reuse. Sydney Water is required to ensure return flow options are fully considered as part of any plan for effluent reuse during STP upgrades. This requirement is outlined in Section 27 of the Act and Licence clause 8.3. This is discussed in further detail in Section 8 – Water Conservation and Demand Management.</p>
3.1.7	Undertake activities to enable consideration of the issue of the water use licence after the mid term operating licence review.	<p>Sydney Water was granted a Water Management Licence under Part 9 of the <i>Water Act 1912</i> on 1 July 2000.</p> <p>Refer to Summary and Background for outline of Regulatory Regime.</p>

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
3.2.1	The program of studies to be jointly supervised by the Department and Sydney Water Corporation to meet the implementation plan as shown in the schedules. NOTE: Compliance against the schedule is provided at the conclusion of this compliance sheet.	<p>Schedule of due dates to be presented in a "Status Table".</p> <p>In 1999, status of S1 studies concerning operations was incomplete, but Licence conditions remained under discussion.</p> <p>S2 studies concerned with Warragamba flood operations continued to be progressed but remained incomplete.</p> <p>Progress on the S3 studies to determine environmental flow needs included completion of the program of releases in the HN and consideration of HRC recommendations for environmental flow management in the Woronora River. For the Shoalhaven River, DLWC is coordinating development of environmental flow objectives as a basis for future flow trials.</p> <p>S4 studies included a draft daily flow management model (at DLWC for testing as of 1999 audit).</p>
3.2.2	<p>The MOU or any licensed will have reviewed and incorporated, and adopted recommendations or endorsed outcomes from:</p> <ul style="list-style-type: none"> - The studies and investigations listed in the schedule - Healthy Rivers Commission report - The EIS and Environmental flows identified in the operating licence 	<p>MOU not amended since originally developed in 1996.</p> <p>MOU review now being undertaken in preparation for next Licence period.</p>
3.2.3	Sydney Water will report on the progress of the program of studies and investigations as part of its operational audits	Progress on the program of studies and investigations has been assessed in the respective sections (viz: Environment) of the audit report.
3.3.1	Any data information required by either organisation will be at a cost to be negotiated.	<p>No Requirement.</p> <p>No cost applied to audit period.</p>

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
3.3.2	Commercial and intellectual property rights are maintained and protected	No Requirement. No reports exchanged under this clause over the audit period.
3.3.3	All flow data is agreed for by release by EPA should be exchanged at a 3 monthly interval at an agreed format.	No Requirement. Flow data now responsibility of SCA and DLWC.
3.3.4	All requests for data or studies should be through a nominated single point in each organisation.	No data exchanged under this clause. Rather office to office exchange occurs. Clause largely appears to be redundant.
4.1	Parties will enter into an agreement by March 1997 to define the heads of consideration to guide preparation of the Water Use Licence.	Clause Redundant.
4.2.1	Sydney Water's rights to store and extract are agreed	Sydney Water has a Water Management Licence which sets out its rights to store and extract water.
4.2.2	Sydney Water will operate its water storages with the aim of ensuring a flow of 50 megalitres of water a day over the Penrith weir	Clause Redundant. Now responsibility of SCA..
4.2.3	Until the water use licence is issued Sydney Water must release sufficient water to enable Shoalhaven City Council to meet its actual requirements for water at Burrier or the amount that would be available if Tallowa Dam did not exist, whichever is the less	Clause Redundant. Now responsibility of SCA.
4.2.4	Water release from the Sydney Water storages to meet these requirements should reverse riverine and environmental impacts and risk to public safety and property.	Clause Redundant. Now responsibility of SCA.

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
4.2.5	Sydney Water should keep the Department informed of any activity that would impact on the Department's role as the State Water manager.	Performance requirement met. Interaction between Sydney Water and DLWC allows for communication regarding activities that may impact upon DLWC's role as the State's Water Manager, ie; as the agency responsible for the implementation of the Water Management Act 2000.
4.3.1	The Department and Sydney Water undertake to influence water and land use activities in order to minimise adverse effects on the quality of water entering the water resource described in this MOU.	Broad responsibility – see Section 8 – Environment: Indicators and Plans. Specific responsibility now with SCA., however, Sydney Water involved in planning process for Regional Environment Plans for catchments.
4.3.2	DLWC and Sydney water will consult (with a wide range of organisations) to determine options to better coordinate actions required to fulfil the MOU.	Performance requirement met. Section 22 Committee consults with other bodies with respect to water quality. Section 388 Committee deals with water quantity (Hawkesbury Nepean Catchment Management Trust and its replacement) MOU with EPA involves shares interests including DUAP, ex- HNCMT, Dept. Fisheries (multilateral committees)
4.3.3	DLWC will assess water volumes extracted and licence attributes.	No Requirement. Now DLWC requirement.
4.3.4	DLWC review its water management policies.	No Requirement. A DLWC action no direct requirement on Sydney Water.
5.1	An agreed framework is needed to address issues and conflicts not specifically covered in this MOU.	Sydney Water raised requirement for review although no pro-active re-establishment of contact. Issues raised to initiate renewal of MOU include: Project Plan to review MOU;

Table C: MOU WAMC Compliance Table

Clause	Requirement	Comment
		Scoping Meeting on MOU between Sydney Water and WAMC; and Draft MOU with DLWC commentary.
5.2	A Strategic Liaison Group (SLG) will be established to consider long term issues and policies, the group would meet twice per year, more frequently as required and provide a frame of reference for reviewing the department and Sydney Waters operational outcomes.	Performance requirement not met. SLG is not meeting at present and has not for some time. Interdepartmental meetings occur on a ad-hoc basis.
5.3	An Operational Peer Review Group be established to review data collection and sharing arrangements, monitor the programs of studies and address issues referred to it by the strategic liaison group.	Performance requirement not met. No Operation Group meetings are taking place. May have previously existed 1997/98 (if ever). Superseded since water crisis and establishment of SCA.

APPENDIX F
CUSTOMER CONTRACT

About the Customer Contract

Sydney Water Corporation, trading as 'Sydney Water', aims to provide a safe, reliable supply of water, to manage sewerage and transport stormwater in an environmentally responsible way, in line with sound commercial practices. Customer satisfaction with our products and services is vital.

Sydney Water is committed to ensuring that you are aware of our services and standards, and that you can help us improve these services. Information from customer inquiries, complaints, surveys and the Customer Councils will help us to continually improve our services to better meet your requirements.

This Customer Contract extends the rights of Sydney Water's customers and is legally enforceable. It clearly spells out the rights and responsibilities of customers and of Sydney Water. It also introduces Sydney Water's new policies for handling your complaints and giving redress, that is, a rebate on your service availability charge, and compensation in the event that we fail to provide our services at agreed standards.

Additionally, consumer rights are further protected by Sydney Water's Operating Licence with the Government. This Licence is for an initial period of five years and will govern Sydney Water's overall performance to provide its services and operate its systems according to specified standards for quality and performance. Sydney Water's performance under the Licence will be reviewed annually and reported publicly by an independent body.

This Contract details, for example, your rights to the supply of water, sewerage and stormwater drainage services, consultation, information and assistance, notice of interruption to supply and more. For those customers who receive a Sydney Water stormwater drainage service in a declared stormwater drainage area, and a small number of customers who have water or sewerage services available to their land but are not connected, this Contract contains rights and obligations relevant to you.

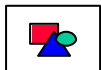
The specific clauses are:

stormwater drainage - clauses 2.4, 3, 4.2, 6 (except 6.3, 6.4), 7.1 to 7.6, 9.1, 11.1 to 11.9, 12, 13.4 and Parts C, D, E and F.

availability charges - clauses 3, 4.2, 6 (except 6.3, 6.4), 7.1 to 7.6, 8.2, 11.1 to 11.8, 12, 13.4 and Parts C, D, E and F.

Relevant provisions are highlighted where appropriate.

If you have any further questions about the Customer Contract, or other matters, please contact your



local Sydney Water Office. Addresses and telephone numbers are provided at the back.

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Introduction

This document sets out the terms of the contract between Sydney Water and each person who is defined to be a customer of Sydney Water. It sets out the rights of customers and those of Sydney Water. The meaning of certain words in this contract is explained in Part F.

Part A - Customer rights

1. YOUR RIGHTS TO SUPPLY OF WATER

Water services

1.1 Sydney Water will supply you, as a customer, with water on the terms set out in this Contract and during the currency of Sydney Water's Operating Licence ('the Licence').

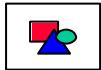
1.2 You are entitled to a supply of water to meet your needs, subject to the terms of this Contract, the Licence and the Sydney Water Act 1994 ('the Act').

1.3 Water supplied to you intended for drinking will immediately meet the health-related aspects established by the National Health and Medical Research Council (NHMRC) and the Agriculture Resource Management Council of Australia and New Zealand (ARMCANZ) Desirable Quality for Drinking Water in Australia 1980 guidelines. Sydney Water must meet the health-related aspects of the NHMRC and ARMCANZ Guidelines for Drinking Water Quality in Australia 1987 according to a timetable agreed with the NSW Department of Health.

1.4 Some customers, in addition to a supply of drinking water, will be supplied with water intended for uses other than drinking. In the case of recycled water, the quality of this water will meet the guidelines published and revised from time to time by the NSW Recycled Water Committee, unless you wish and Sydney Water agrees to a different standard.

1.5 Sydney Water will supply water at a pressure adequate for most normal domestic and commercial uses, which is 15 metres head at the main tap. This will be the case, except in those areas designated as low pressure areas by Sydney Water's Licence. A list of low pressure areas is set out in Sydney Water's Licence. A copy of the current list has been reproduced as Attachment 1 to the Contract.

1.6 Where Sydney Water is not able to supply you with water you may in certain circumstances be entitled to a rebate on part of your service availability charges as detailed in clause 6.3.



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2. YOUR RIGHTS TO SUPPLY OF SEWERAGE AND STORMWATER DRAINAGE SERVICES

Sewerage services

2.1 Sydney Water will supply you with a sewerage service under the terms set out in this Contract, the Licence and the Act. You have a right to use Sydney Water sewerage services for discharge of domestic sewage.

2.2 Where Sydney Water is not able to provide you with a sewerage service you may in certain circumstances be entitled to a rebate on part of your service availability charges as detailed in clause 6.3.

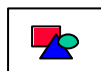
Trade wastewater services

2.3 You may make use of Sydney Water's sewerage services for the discharge of trade wastewater provided you have first entered into a trade wastewater service agreement or obtained a trade wastewater permission from Sydney Water. Trade wastewater service agreements and permissions are issued subject to Sydney Water's ability to accept, transport and process trade wastewater from your land in full compliance with applicable safety and environmental laws, the Licence and the Act. Industrial, commercial, small business, and home business customers will generally be required to enter into an agreement or obtain permission from Sydney Water to discharge trade wastewater into Sydney Water's sewerage system. Further information may be obtained from any Sydney Water Office.

Stormwater drainage services

2.4 Sydney Water provides primarily a trunk stormwater drainage service for the transportation of stormwater in the systems under its control. The provision and charging for these services will only concern you if your land is within a declared stormwater drainage area. Maps are available for inspection at your local Sydney Water Office to assist you in determining whether your land is within a declared stormwater drainage area. Sydney Water will notify you in writing if a new area is declared which affects your land. Where your property is within a declared Sydney Water stormwater drainage area, you will be

supplied with a stormwater drainage service in accordance with the relevant terms set out in this Contract, the Licence and the Act.



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3. YOUR RIGHTS TO CONSULTATION AND INFORMATION

Customer consultation

3.1 Sydney Water is committed to involving its customers in issues relating to its programs and services and is required to establish and consult with Customer Councils. Other forums and vehicles for community input will be established to enable community input, expertise and advice to Sydney Water's service planning and decision making processes.

Information

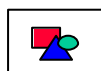
3.2 Sydney Water will inform you of matters which relate to your supply of water; sewerage and its stormwater drainage services and other matters, including charging, complaints handling and dispute resolution.

3.3 Sydney Water will respond openly and in a timely manner to any requests for information by other parties, where the provision of such information will comply with normal commercial practices. Sydney Water is subject to the Freedom of Information Act 1989. In addition, Sydney Water is subject to investigation and audit by the NSW Ombudsman, Independent Commission Against Corruption, NSW Auditor-General and the Public Accounts Committee.

3.4 Customer information may include educational material, for example, about how to save water, as well as information about the direction and planning of Sydney Water's services.

Sydney Water Offices

3.5 Sydney Water will publish and keep up-to-date a list of local offices and emergency contact numbers in the areas covered by its Licence. A list is included for your information as Attachment 2.



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4. YOUR RIGHTS TO NOTICE OF INTERRUPTION TO SUPPLY AND WITH REGARD TO ENTRY ONTO LAND

Notice of interruptions or limitation for maintenance and work

4.1 Except in emergencies, Sydney Water will give you the following notice of its intention to interrupt, postpone or limit the supply of services to you for the purpose of regular maintenance or works programs:

domestic customers - 48 hours

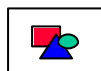
commercial and industrial customers - 7 days.

Sydney Water aims to limit interruption of service for regular maintenance and works programs to 6 hours. If your supply is interrupted for a period greater than 6 hours in one continuous period under these circumstances, Sydney Water will give you a rebate as set out in clause 6.3.

Notice of entry on your land

4.2 The circumstances in which Sydney Water may enter your land are set out in the Act and include entry to inspect, maintain, repair or construct works on your land or parts of systems which concern your land, reading meters and finding sources of pollution of water. Except in these circumstances and others

detailed in the Act, you are not required to allow the entry by Sydney Water (including an employee or contractor of Sydney Water) on to your land.



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5. YOUR RIGHTS TO MAINTENANCE AND REPAIRS

Restoration and repair of water supply and sewerage services

5.1 Sydney Water aims to provide a continuously available supply of water and sewerage services. When planned interruptions to supply occur, Sydney Water will provide you with notice as outlined in clause 4.1, and restore supply promptly. In the case of interruptions to water supply, of greater than one hour, which have not been notified in accordance with clause 4.1 Sydney Water will give you a rebate as set out in clause 6.3.

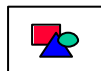
5.2 Should you experience problems with your water connection from Sydney Water's main to your meter, Sydney Water's and your rights and responsibilities are set out in clause 13.

Surcharges from Sydney Water's sewers

5.3 Sydney Water will use its best endeavours to minimise the incidence of sewer surcharges on your property due to failure of Sydney Water's sewerage system. If surcharges occur on your property due to a Sydney Water system failure, Sydney Water will take action to minimise any damage or inconvenience and to clean up the affected area.

Emergency assistance

5.4 To assist you in the event of a burst water main near your property or surcharge from the sewer, Sydney Water will maintain a 24-hour emergency service. Emergency phone numbers are listed in Attachment 2.



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6. YOUR RIGHTS TO CUSTOMER ASSISTANCE, REDRESS AND COMPENSATION

Customer complaint handling

6.1 As part of improving its customer services, Sydney Water welcomes your comments, suggestions and enquiries.

If you have a complaint, we will investigate it, report back to you, and do all we can to solve the problem or address the issue efficiently and effectively. You have a right to:

a face-to-face or telephone response within 2 working days where you have made a face-to-face or telephone contact (or application for redress) and the matter cannot be dealt with immediately due to the need to assess the circumstances of the matter; or

a written response within 5 working days where you have made a written contact (or application for redress) and the matter cannot be responded to sooner by telephone or face-to-face contact.

Customer complaint resolution process

6.2 Sydney Water's process for handling customer complaints is outlined below along with relevant contact numbers for your enquiries and/or complaints:

In the first instance, you should contact a 24 Hour Emergency Service Centre if there is a service difficulty

or your local Sydney Water Office if you have an inquiry and/or complaint. Sydney Water staff will assess the problem and offer an appropriate solution within established policies and procedures. If you are not satisfied with the solution offered or action taken, you have a right to have the matter referred to an appropriate Manager for review.

Should you not be satisfied with this review or any solution offered, or if the matter is unable to be resolved, it will be referred to the Regional Manager for further review. The Regional Manager will ensure that the matter has been investigated appropriately and that the final decision meets business needs and Sydney Water's customer obligations.

At any stage during the process you may wish to pursue the matter through an external body, independent of Sydney Water. These bodies have documented processes and time frames for responses which Sydney Water will be obliged to meet. Examples of bodies which may be able to assist you in this regard include the Ombudsman's Office or the Consumer Claims Tribunal.

Customer redress

6.3 With the exception of events provided for in clauses 9.1(a) (drought), 9.1(d) (events beyond control), and 10.1 (non-compliance with Contract), if you experience a discontinuity in the supply to you of a water or sewerage service due to a problem in Sydney Water's water or sewerage system, you are entitled to an automatic 10% rebate on the water and/or sewerage service availability charge if the discontinuity lasts more than 1 hour without notice, or 6 hours if notice is given in accordance with clause 4.1. Where eligible, you are entitled to a rebate for each and every incident which you experience. The rebate will be given in your next statement of account.

6.4 If Sydney Water's activities can be shown to cause damage or disruption to you because of effects such as dirty water, water pressure below 15 metres head at the main tap, or other impacts of operations, Sydney Water will deal with your complaint in accordance with clause 6.2 above. Depending on the nature and severity of your grievance, Sydney Water will provide rectification, rebates or payments to compensate you for these impacts, based on an assessment of the situation.

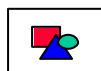
Review and audit of customer service

6.5 A record of all customer complaints and action taken on customer complaints will be maintained by Sydney Water.

This information will be provided to the Licence Regulator for the independent audit and mid-term review of the Licence.

Damage to your land

6.6 If Sydney Water enters your land and as a result your land or property is damaged, you may have a right to compensation. Your right to compensation is set out in the Act, which requires Sydney Water to do as little damage as practicable in exercising its functions, and in circumstances specified in the Act, to



compensate persons who suffer damage.

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7. YOUR RIGHTS IN RELATION TO CHARGES, METERS AND ACCOUNTS

Limit on charges

7.1 Prices for Sydney Water's water, sewerage and stormwater drainage services cannot exceed the maximum prices determined by the NSW Government Pricing Tribunal, and where the Pricing Tribunal has stipulated a method for the calculation of those charges it can only be calculated in accordance with that method.

Variation of charges

7.2 If Sydney Water varies the prices for water, sewerage or stormwater drainage services, the variation may begin only from the date of the next statement of account, or next meter reading period in the case of variations in water usage prices, or any other date after the variation that Sydney Water notifies. However, if the other bases for charging your land vary before the next statement (for example, you make an additional connection, acquire a larger service connection, or the nature and use of land changes) then those changes will be reflected as and when they occur.

Adjustment to charges

7.3 Sydney Water has the discretion to make refunds, waive or defer payments to it on matters it thinks appropriate. If there is an error made by Sydney Water in the charges to you which results in you paying too much, Sydney Water must refund any over-payment together with interest at the rate determined under clause 11.6.

Assistance with paying accounts

7.4 Sydney Water has a range of schemes to assist customers experiencing hardship in paying their accounts. You are entitled to information on these schemes and to be considered for such assistance. Contact your local Sydney Water Office for details of these schemes.

Publication of charges

7.5 Sydney Water will publish information on its charging policies and procedures. Brochures on Sydney Water's charges are available from your local Sydney Water Office.

Statement of account

7.6 Statements of account are issued on a regular basis. For domestic customers this will be quarterly, unless varied by agreement with Sydney Water. If you wish to know about outstanding charges at any other time, a printed statement can be issued to you by your local Sydney Water Office on request.

Water meters

7.7 A water meter will be supplied to you by Sydney Water free of charge unless other arrangements for the use and maintenance of the meter are agreed. You are required to pay for the meter's installation and are required to ensure that it is installed by a plumber licensed by the appropriate regulatory body.

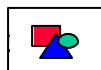
7.8 If you consider that the water meter on your land is not accurately recording water consumption, you may request Sydney Water to test the accuracy of the meter.

7.9 You will be charged a fee to cover the cost of this testing. However, if the meter is found to be faulty and over-recording water consumption, this fee will be refunded to you. In addition, your account will be adjusted. This adjustment will usually be in accordance with the previous corresponding period or the following usage period.

7.10 If no water consumption was recorded on your previous meter reading period or if you have not previously received an account for your land, your account will be adjusted on the basis of the first meter reading after the meter has been repaired or replaced.

7.11 Where no satisfactory basis exists to adjust a usage charge, Sydney Water and the customer may enter into negotiations to settle adjustment of charges in a mutually agreeable manner.

7.12 A water meter will be considered to be faulty and over reading if, when tested, it registers a variation of 3% or more above the actual quantity of water passed through it.



8. YOUR RIGHTS TO DISCONNECT AND RECONNECT

Disconnection

8.1 You have the right to disconnect your land from the water or sewer main to which it is connected, provided that you:

- (a) first notify Sydney Water of your intention to disconnect; and
- (b) make the disconnection using a qualified person in compliance with section 99 of the Act and the disconnection is conducted in accordance with the Act's Plumbing and Drainage Regulations.

For advice on these technical requirements, contact your local Sydney Water Office.

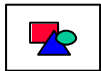
8.2 Even if you disconnect you do not automatically terminate this Contract (Please see Part E - Termination). Sydney Water is required by the Act and Licence to continue charging you a service availability charge where a water or sewer main continues to be available for connection to your land. However, you may apply to Sydney Water to be exempted from these charges if not connected to a water or sewer main. You may appeal to the Licence Regulator following any decision by Sydney Water not to exempt you from these charges.

Reconnection

8.3 If you have disconnected from the water or sewerage system in accordance with clause 8.1, you may reconnect to an available main provided that:

- (a) you pay any reconnection fee which may be charged by Sydney Water; and
- (b) you comply with any conditions Sydney Water may determine to ensure the safe, reliable and financially viable supply of services.

8.4 If you wish to reconnect, but Sydney Water refuses, you may appeal to the Licence Regulator in



respect of Sydney Water's decision.

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Part B - Sydney Water's rights

9. SYDNEY WATER'S RIGHTS TO INTERRUPT SUPPLY

Interrupt, postpone or limit supply

9.1 Sydney Water may interrupt, postpone or limit the supply of its water, sewerage or stormwater drainage services to you:

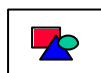
- (a) in the case of water services, during a drought and on the approach of a drought; or
- (b) if any part of works are damaged, for example by bursting, blockages or breakdowns; or
- (c) if in the reasonable opinion of Sydney Water it is necessary to inspect, maintain, repair or replace any part of works; or
- (d) if an event occurs beyond Sydney Water's control, including war, sabotage, civil commotion, national emergency, fire, flood, cyclone, earthquake, landslide, explosion, power or water shortage or industrial action.

Restrictions in drought

9.2 During a drought, and on the approach of a drought, you must comply with the terms of supply determined by Sydney Water. Sydney Water must publish, in major newspapers circulating throughout the Licence area, a notice setting out its drought supply conditions. These may include:

- (a) restrictions on the use of water, including the purpose for which water may be used; and
- (b) a variation in charges consistent with the Act and Licence; and
- (c) other conditions that Sydney Water considers appropriate, including the period or likely period of restrictions or limitations on supply and usage of water.

9.3 In addition to publishing a notice in major newspapers of its drought supply conditions, Sydney Water will endeavour to give you notice in the next statement of account setting out its drought supply conditions. However, a failure by Sydney Water to comply with this requirement does not affect the validity of its drought supply conditions.



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10. SYDNEY WATER'S RIGHTS TO REFUSE SUPPLY

Grounds for restriction and disconnection of supply

10.1 Sydney Water may restrict or refuse to supply or discontinue its supply of services to you if:

- (a) you do not comply with the terms and conditions of this Contract (except where the matter is under consideration by Sydney Water - ie a matter or dispute which is in the process of being resolved such as a claim of financial hardship) or your obligations under the Act. In such circumstances, Sydney Water must give you reasonable notice in writing of its intention to refuse or alter supply unless an emergency or other special situation exists; or
- (b) you do not pay Sydney Water's charges and fees for the services and these charges and fees remain unpaid (in part or in full, including any interest on them). In such circumstances Sydney Water must give you 48 hours notice in writing of its intention to refuse or alter supply.

Reinstatement of supply

10.2 Sydney Water must reinstate its supply of services at your request and on the payment of all outstanding charges or by the establishment of a mutually agreeable arrangement for the payment of outstanding charges, and interest together with any fee set in accordance with the Act and Licence.



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11. SYDNEY WATER'S RIGHTS IN RELATION TO CHARGES, METERS AND ACCOUNTS

Setting and variation of charges

11.1 You are required to pay the fees and charges set by Sydney Water for the services applicable to you as determined and varied from time to time in accordance with this contract and determinations by the Pricing Tribunal and other requirements of the Licence and Act.

Statement of account

11.2 A statement of account will be treated as having been delivered if it is either delivered to you personally, delivered by post, or transmitted to you electronically and addressed to you at the address notified by you in writing to Sydney Water, or if you do not notify Sydney Water of an address, at:

(a) the land to which the services are available or provided; or

(b) your last known postal address.

11.3 If you require a statement of account outside the usual meter reading period (for example, to make adjustments connected with sale of your land), Sydney Water may calculate the usage charge by reading the meter on your land or by estimating consumption based on the previous meter reading period.

Obligation to pay

11.4 You must pay Sydney Water the charges for the services supplied to you as set out in each statement of account.

11.5 If you are the owner at the date a statement of account is issued for any land, you are responsible for payment of all charges specified in the statement. If you are the owner of strata title land at the date a statement of account is issued, you are responsible for paying the full availability charge for your land. Your Body Corporate will be liable for water usage charges.

Overdue amounts

11.6 Sydney Water may charge you a late fee or interest on overdue accounts (other than on unpaid interest). The rate of interest must not exceed the current rate applicable under section 95(1) of the Supreme Court Act 1970 to a judgment debt. Sydney Water will adopt any change to the rate within 30 days of the rate being prescribed.

The late fee is a minimum charge aimed at recovering the administrative cost of issuing late payment notices, and is regulated by the Pricing Tribunal. The late fee may be payable instead of interest where the interest charge on overdue amounts would be less than the late fee. Where interest is charged, there will be no late fee.

Dishonoured cheques

11.7 If you pay by cheque and the cheque is not honoured for any reason, Sydney Water may charge you the administrative fee charged to it by its banker.

Adjustment to charges

11.8 If there is an error made in the charges to you which results in you paying less than the correct amount, you must pay the correct charge on request.

Charge for defective work

11.9 As detailed in clause 13 of this Contract, you are responsible for the maintenance of your water and/or sewerage service to its point of connection with Sydney Water's system. If Sydney Water becomes aware of the presence of any defective or improper work forming part of any of your water or sewerage service which in its opinion impairs the effective operation of the Sydney Water system, it may serve a notice on you requiring you to remedy any such defect or improper work within 24 hours or such longer period as stated in the notice. Sydney Water may also serve such a notice on you if you have a stormwater drainage service connected to a Sydney Water stormwater channel.

If the terms of the notice are not complied with, Sydney Water may undertake to remedy the defective or improper work itself, and may enter your land to do this in accordance with the Act. You may be charged the cost incurred by Sydney Water in remedying this work.

Water meters

11.10 The supply of water to any land by Sydney Water must be measured by a water meter approved by Sydney Water, unless otherwise agreed. For example, you and Sydney Water may agree to substitute some readings with estimates based on previous or subsequent readings.

11.11 The quantity of water supplied by Sydney Water as registered by a meter will be taken to be the quantity of water actually supplied, unless there is evidence that a materially different quantity was supplied. For example, it will be considered that a materially different quantity has been supplied if the accuracy of a meter has been tested in accordance with clause 7.8 and it has been shown that the meter registers a variation of 3% or more above the actual quantity of water passed through it.

11.12 A meter supplied by or transferred to Sydney Water and forming part of a water service to you for your land, remains the property of Sydney Water irrespective of who installs the meter.

11.13 Sydney Water may charge you for repair or replacement of the meter on your land caused by wilful damage or negligence.

11.14 Where there is no meter or other instrument measuring supply, Sydney Water may charge an unmetered service charge as determined by the Pricing Tribunal.

11.15 If Sydney Water is prevented from reading a meter on your land because of difficulties in gaining access, Sydney Water may charge you for water usage based on its estimate of your usage and recover the cost of the attempted meter reading. If difficulties occur for two or more successive meter reading periods, Sydney Water may either:

(a) seek suitable access or make other meter reading arrangements with you, whether by arranging for access at a special time suitable to you, which may incur an additional fee, or by relocating the meter or coming to some other mutually acceptable solution; or

(b) if suitable access or meter reading arrangements cannot be provided on an ongoing basis, Sydney Water may treat your land as unmetered, and charge ongoing unmetered service charges as determined by the Pricing Tribunal. The continuation of this charging basis is solely at the discretion of Sydney Water and does not prejudice its rights to address access issues at any subsequent time.



[toptop](#)

12. LIMITATION OF LIABILITY OF SYDNEY WATER

12.1 Subject to clause 12.2:

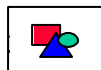
(a) any conditions or warranties imposed by any relevant legislation or any undertakings given in any other way relating to the services or goods supplied by Sydney Water to you are excluded from the Contract, and to the extent that a condition or warranty cannot be excluded, Sydney Water's liability is limited, at the option of Sydney Water, to one or more of the matters or remedies referred to in section 68A(1) of the Trade Practices Act; and

(b) Sydney Water is not liable for any loss or damage that you suffer as a result of a breach of this Contract by Sydney Water unless the loss or damage arose from Sydney Water's negligence.

12.2 The limitation of Sydney Water's liability as set out in clause 12.1 is subject to:

(a) your rights to compensation and redress in the circumstances set out in this Contract (for example, your right to compensation under clause 6.3 where there has been a prolonged interruption, postponement or limitation to supply); and

(b) the rights which you may have under any legislation which cannot be excluded (for example, the Trade Practices Act).



13. CUSTOMER AND SYDNEY WATER RESPONSIBILITIES FOR WATER, SEWERAGE AND STORMWATER DRAINAGE SERVICES

Installation and connection of services

13.1 If the connection is made from a water or sewer main owned by Sydney Water to your land, you are responsible for its installation costs. Sydney Water may impose conditions to ensure the safe, reliable and financially viable supply of services, and in accordance with its Licence, satisfactory compliance by an owner with such conditions of connection are to be taken as forming an essential requirement of gaining Sydney Water's approval to connections to its systems. Approval or authorisation is necessary for you to have the rights of this Contract in accordance with clause 14.1.

Water services

13.2 You are responsible for all plumbing between your water taps and the meter. Sydney Water will maintain all pipes between the water main and the meter on your land, where the water meter is located within one metre inside your property boundary. Where your meter lies more than one metre within the boundary, Sydney Water will maintain the connection from the water main up to one metre within the boundary.

Sydney Water is not responsible for:

Illegal services and water services installed contrary to Sydney Water's requirements

Privately owned temporary water services (extended private services)

Fire services

Backflow prevention devices on non-domestic properties

Water services connecting to privately owned watermain (eg. in some Community Title Subdivisions)

Costs of installing new services or modifying, upsizing or relocating existing services

Wilful or negligent damage to the service except if caused by Sydney Water.

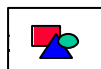
Sewerage services

13.3 Sydney Water's sewerage services are provided from the point where the pipes serving your property connect to its sewer main.

You are responsible for all plumbing and fixtures on or serving the property to the point where pipes connect to the sewer main. This connection could be on public land outside your property boundary. Some sewers and access structures are located within private property, and in these instances, the sewers and access structures remain Sydney Water's property. You must ensure that Sydney Water's structures on your land are reasonably accessible, are not covered or buried and are not damaged.

Building over water, sewerage and stormwater drainage systems

13.4 Customers must also ensure that they contact a Sydney Water Office prior to undertaking building or construction which may interfere with Sydney Water's systems. Staff at your local Sydney Water Office can provide advice on this matter.



Part C - Commencement

COMMENCEMENT OF THIS CONTRACT

14.1 This Contract commences on 1 January 1995 if you are already connected to a Sydney Water system or on whatever date you subsequently connect to a Sydney Water system. However, in accordance with section 56 of the Act, an owner of land is not taken to have entered into a customer contract unless the connection to a water or sewer main is authorised or approved by Sydney Water, a predecessor of Sydney Water or another appropriate authority.

14.2 In respect of customers to whose land a main of Sydney Water is, or becomes, available for supply but is not connected, this Contract commences on 1 January 1995 or at whatever subsequent date the main becomes available for service to the customer as a result of publication of its availability in the NSW Government Gazette.

14.3 Terms in this Contract related to stormwater drainage services come into effect on 1 January 1995 for land within a declared stormwater drainage area, or on any subsequent date land may be declared to be within a stormwater drainage area.

Part D - Variation

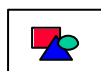
VARIATION IN THE TERMS OF THIS CONTRACT

15.1 Sydney Water may vary this Contract with the approval of the Governor by a notice setting out the variation at least 6 months (or any shorter period to which the Minister agrees) before the variation becomes effective.

15.2 A notice of variation must be published, prior to the variation coming into effect, in a daily newspaper circulating in the area covered by Sydney Water's Licence.

15.3 A copy of the notice of variation will be given to you with the next statement of account sent to you after the date of publication of the notice. However, a failure to do this does not affect the validity of the variation.

15.4 Requirements to give notice of alterations to terms of this Contract, as specified in clause 15.1, do not apply to variations in charges and fees, which are made and notified in accordance with other clauses



in this Contract.

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Part E - Termination

TERMINATION BY AGREEMENT

16.1 This Contract may be terminated by agreement in respect of a particular piece of land that you own if:

- (a) you give prior written notice to Sydney Water of your wish to terminate; and
- (b) your land is disconnected from all mains; and
- (c) Sydney Water exempts you from ongoing availability charges in respect of that land; and
- (d) that land is not situated in a stormwater drainage area declared in accordance with section 65 of the Act.

OTHER FORMS OF TERMINATION

16.2 This Contract will terminate immediately upon you ceasing to own your land provided that at the time of such cessation no amount remains unpaid by you to Sydney Water and no other matters remain outstanding which Sydney Water has requested you to do.

16.3 This Contract will terminate if Sydney Water's Licence terminates.

16.4 Any termination of this Contract will be without prejudice to any rights and obligations of Sydney Water or yourself that accrue prior to termination.



[toptop](#)

Part F - Meaning of words

Act means the Sydney Water Act 1994 and includes any regulations made under it.

Availability charge means, in relation to a water or sewerage service, a charge by Sydney Water for access to that service, rather than use of the service, whether the land concerned is connected to the service, or is not connected but has the service reasonably available for connection and that land is charged by Sydney Water in accordance with section 64 of the Act as a requirement of its Licence.

Customer means any person who is taken to have entered into a Customer Contract in accordance with section 55 of the Act, or to have entered into a contract on terms relating to the imposition of charges under sections 64 or 65 of the Act. Persons who come within this definition of 'customer' are those who are owners of land which is:

- (a) connected to a watermain or sewer main owned by Sydney Water; or
- (b) not connected but having available for connection a water main or sewer main owned by Sydney Water and liable for charges by Sydney Water in accordance with Sydney Water's Licence; or
- (c) within a declared stormwater drainage area located in Sydney Water's Licence area.

Domestic sewage means all liquids and any substances in them, which may be produced by the use of toilets, hand basins, urinals, sinks, baths, showers, washing machines and similar items when used by persons for their personal hygiene.

Drought means a scarcity of water notified to Sydney Water by the Minister as being a drought.

Licence means the Operating Licence issued by the Governor of New South Wales to Sydney Water under section 12 of the Act.

Licence area means the area of operations defined in the Licence.

Licence Regulator means a body established under section 30 of the Act.

Meter means a meter or other apparatus for the measurement of water, sewage or waste products, including any pipes and fittings ancillary to the meter or apparatus.

Minister means the Minister administering the Act.

Owner has the meaning set out in section 3(2) of the Act.

Pricing Tribunal means the NSW Government Pricing Tribunal established under the Government Pricing Tribunal Act 1992.

Stormwater drainage means the stormwater drainage system transferred to Sydney Water under Part 3 of the Act.

Surcharge means an uncontrolled spillage from Sydney Water's sewerage system that does not occur through a designated overflow structure.

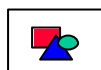
Sydney Water means Sydney Water Corporation.

Trade wastewater means all liquids and any substance comprising sewage with the exception of domestic sewage.

Water services mean services provided by the water system as defined in the Licence.

Sewerage services means services for accepting, transporting and processing domestic sewage and trade wastewater.

Works means the water, sewerage and stormwater drainage systems owned by or under the control of Sydney Water.



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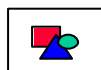
Attachment 1 Low pressure areas (Clause 1.5)

The following areas are designated as low pressure areas in accordance with Sydney Water's Licence:

Urban areas adjacent to reservoirs in the Blue Mountains.

Non-urban properties in Bayview, West Camden, Silverdale, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains.

Plans showing the location of properties in the above designated areas are available for inspection at your local Sydney Water Office.



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Attachment 2 - Sydney Water Offices as at 1.1.95 (Clause 3.5)

METROPOLITAN REGION INCLUDING ILLAWARRA

Local Government Areas

Ashfield Auburn Bankstown Baulkham Hills

Blacktown Blue Mountains Botany Burwood

Camden Campbelltown Canterbury Concord

Drummoyne Fairfield Hawkesbury Holroyd

Hornsby Hunters Hill Hurstville Kiama

Kogarah Ku-ring-gai Lane Cove Leichhardt

Liverpool Manly Marrickville Mosman

North Sydney Parramatta Penrith Pittwater

Randwick Rockdale Ryde Shellharbour

South Sydney Strathfield Sutherland Sydney City

Warringah Waverley Willoughby Wingecarribee (Part)

Wollondilly Wollongong Woollahra

Addresses for Customer Service Centres

Customer Service Centres (Mon-Fri 8.30am-4.30pm)

Level 3, 22 Main St, BLACKTOWN 2148

432 Victoria Ave, CHATSWOOD 2067

Old Springhill Rd, CONISTON 2500

103 Katoomba St, KATOOMBA 2780

Cnr Bigge & Moore Sts, LIVERPOOL 2170

564 Princes Hwy, ROCKDALE 2216

115-123 Bathurst St, SYDNEY 2000

Enquiries All Areas Phone: (02) 13 20 92

Head Office

General Enquiries Phone: (02) 13 20 90

115-123 Bathurst Street, SYDNEY 2000

P0 Box A53, SYDNEY SOUTH 2000

Emergency Contact (24 hours)

Service Centre (all areas) Phone: (02) 13 20 90

APPENDIX G
CUSTOMER CONTRACT COMPLIANCE TABLE

Table D: Customer Contract Compliance Table

Clause	Requirement	Compliance	Findings
1	Customer rights to supply of water	High compliance	<p>Under this clause there are various sub-clauses which describe the provision of water to customers. While the compliance with the relevant health guidelines is addressed in other parts of the Licence, assessment of the customer's perceptions about the supply of water obtained through residential and commercial/industrial customer surveys which were reviewed by the auditor.</p> <p>Questions covering water quality, interruptions to supply and water pressure were reviewed. While generally high levels of satisfaction were recorded, consistent with previous years, there are some issues related to measurement methods which are covered in the Discussion (see Section 5.4.1)</p> <p>For the 6 months to June 2001 1,677 customers complained about dirty water; 322 other water quality and 44 on water health. A further 2,423 complained about water continuity.</p>
2	Supply of Sewerage and Stormwater Drainage	High compliance	<p>As with water supply, customer surveys commissioned by Sydney Water were used to review customer perceptions on sewerage and stormwater. Sydney Water has undertaken a number of customer surveys including residential, tradewaste and stormwater. While there appear to be generally high levels of satisfaction with sewerage and trade waste disposal, stormwater was more problematic.</p> <p>Sydney Water share the responsibility of stormwater with local government and so a fair evaluation of Sydney Water performance is difficult to make.</p>
3	Consultation and Information	High compliance	<p>Sydney Water has maintained Customer Councils and has developed a community consultation policy and protocol. Information is communicated through a variety of media including the Sydney Water website and a variety of brochures and pamphlets.</p> <p>A number of research projects obtaining information from Sydney Water customers and stakeholders are conducted on a regular basis. While a Ministerial Directive covering this area is reviewed in Section 10 of this report, the auditor has assessed Customer Council charters, summary reports and minutes of the various Councils. It appears that some charters may need to be updated to ensure they conform to the new Operating Licence.</p> <p>To improve effectiveness, Councils could be engaged to provide compliance information regarding the Customer Contract. Regional Councils may also be better organised around key infrastructure</p>

Table D: Customer Contract Compliance Table

Clause	Requirement	Compliance	Findings
			<p>boundaries (i.e. water and sewerage systems) and consideration should be given to the appointment of independent Chairpersons for each Council. Such an organisation should result in Councils reflecting the issues associated with infrastructure relevant to their geographical area of interest.</p> <p>Sydney Water indicates that they have a Corporate Communications Plan that has been in place since May 2000 and assists in coordinating the various communication tasks of Sydney Water. Sydney Water indicates the plan has a number of priority areas for action including internal communications; community consultation and media management.</p>
4	Notice of Interruptions to Supply	High compliance	<p>Sydney Water maintains records of interruptions to supply. A report has been provided which shows the number of customers who had water supply interrupted and the number who had received the appropriate notification. Information provided by Sydney Water suggests a 99.352% compliance with this section of the Contract for the period 2000/01. Of 102,675 interruptions to be notified only 665 were not notified as required.</p> <p>Water continuity generated 2,423 complaints out of 17,922 complaints for the period January - June 2001.</p>
5	Maintenance and Repairs	Partial compliance	<p>If interruptions to water supply have not been notified and are greater than one hour the Sydney Water is required to give a rebate. It appears that the time off – time on calculation is primarily based upon the time that Sydney Water work teams turn off the water for repairs rather than when an event ie burst water main occurs or when it is reported.</p> <p>Sydney Water has given the auditor assurances that customers would not be totally without water in such circumstances until the work teams have turned off the appropriate valves to undertake the work. This may result in some customers not receiving a rebate even though their water may have been interrupted for longer than one hour. However Sydney Water indicate that if the maintenance crew determine that the customer was without water prior to the shut down of a watermain, the team leader can estimate the time the customer was without water prior to closing the valve during the repair. While such incidents may occur this becomes a difficult process to audit to assess compliance, particularly if the customer is unaware of their rights and are not home at the time of the interruption.</p>

Table D: Customer Contract Compliance Table

Clause	Requirement	Compliance	Findings
			<p>The customer surveys indicate that 23% of residential customers had their water supply shut off in the last 12 months. A similar rate was also reported for the commercial/industrial customer survey. No questions were asked to determine if these people believe they were entitled to a rebate or whether they received a rebate. However questions were asked to assess whether customers believed a rebate should be paid if the water or sewerage system breaks down.</p> <p>Information was provided by Sydney Water on the number of consumers eligible, paid and value of rebates for the audit period. These rebates were classified by type of problem including water discontinuity, water pressure, sewer overflow and dirty water. Of the 182,090 customers eligible for rebates 81.8% resulted from water discontinuity problems. A total of \$1,804,253 was paid in rebates. All customers eligible for rebates appear to have been paid except for 2,670 suffering water pressure problems. Independent information was not obtained to check whether all those people who were entitled to receive rebates actually received them. This would require contacting property owners who had supply interrupted and ask them whether they believe they meet the criteria for receiving a rebate and whether or not they actually received a rebate.</p> <p>Sewage overflows is the area that appears to generate the largest number of complaints to the Sydney Water. For the 6 months January – June 2001 7,865 complaints related to sewage overflow compared to a total of 17,922 complaints for the period.</p> <p>Emergency service is available through publicised emergency service numbers.</p>
6	Customer Assistance, Redress and Compensation	Full compliance	The Contract identifies complaint-handling procedures, however the Licence also addresses dispute resolution schemes in Part 12 in significant detail. Data has been collected about these complaints and will be discussed under the Part 12 review of the Licence.
7	Charges, Meters and Accounts	High compliance	<p>To assess information relevant to this section, a review was undertaken of a sample bill, customer surveys, brochures and material relevant to the various sub clauses of Part 7. Sydney Water applies charges set by IPART and communicates such charges through the bills sent to customers.</p> <p>Account/rating/billing complaints number 3,181 out of a total 17,922 complaints for the period Jan-</p>

Table D: Customer Contract Compliance Table

Clause	Requirement	Compliance	Findings
			June 2001. This is the second highest complaint-generating category recorded. Surveys of customers generally indicate that Sydney Water is perceived to provide good value for money although residential customers rate electricity and postal providers higher value for money. Sydney Water provides assistance to those suffering hardship through the provision of vouchers through welfare agencies
8	Disconnect and Reconnect	Full compliance	Sydney Water provides customers with the ability to connect and reconnect to the Sydney Water services.

APPENDIX H
SUBMISSIONS FROM OTHER AGENCIES

Mr M Pignatelli
Project Manager
Egis Consulting
PO Box 201
CHATSWOOD NSW 2057

INCOMING CORRESPONDENCE				
DATE IN	26-10-01			
PROJECT MGR.	1/1/1	INTL <input checked="" type="checkbox"/>		
PROJECT No.	VAC491			
FILE No.				
TO				
A/C				
INTL				

101/10810

Dear Mr Pignatelli

I am writing in relation to the Operational Audit of Sydney Water Corporation. Thank you for the opportunity to provide comment on Sydney Water's performance.

The NSW Department of Health is satisfied that, during the audit period, Sydney Water complied with its public health requirements under the Operating Licence and the Memorandum of Understanding. I am pleased to advise that the Department continues to enjoy an open, honest and co-operative relationship with Sydney Water.

I commend to you the report of the *Independent Audit of Drinking Water Quality for 2000/2001* that was prepared on behalf of the Department. The Independent Audit contains a detailed review of compliance with public health requirements, and progress towards implementing the recommendations of the 1999 audits. The Department considers progress towards addressing recommendations of previous audits appropriate and adequate.

Sydney Water maintains a Drinking Water Quality Monitoring Program in agreement with the Chief Health Officer. It is of note that, over the audit period, each of the delivery systems was compliant with the health-related parameters of the *Australian Drinking Water Guidelines*. During the audit period, joint incident management exercises were conducted and the on-line system for reporting test results was developed. The Independent Audit reported that an Incident Report Form B could not be found for an incident that occurred in March 2001. Sydney Water subsequently provided this form to the Department.

The Department is satisfied that the Operating Licence and the Memorandum of Understanding adequately address public health issues. The Independent Audit noted concerns in relation to the large number of separate audits of Sydney Water. The Department would support measures to rationalise the audit processes, provided the integrity of public health reporting is maintained.

Should you have any specific concerns or questions regarding Sydney Water's performance, please contact Dr Paul Byleveld in the Water Unit on 9816 0292.

Yours sincerely



Michael Reid
Director General



Maurice Pignatelli
Egis Consulting Australia Pty Ltd
PO Box 201
CHATSWOOD NSW 2057

NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE

ABN 30 841 387 271

Dear Mr Pignatelli

RE: AUDIT OF SYDNEY WATER CORPORATION

Thank you for your letter dated 3rd October 2001 regarding the above.

In relation to the specific items identified in the Sydney Water Operating Licence as relating to the National Parks and Wildlife Service (NPWS), being Part 9 – Environment - Indicators and Plans - 9.2.3 and 9.5.4, I am pleased to advise that Sydney Water has consulted with the NPWS as required in 9.2.3. However I can find no record of consultation in relation to point 9.5.4.

I am pleased to report that the above licence requirements have been included in more general discussions between senior officers from Sydney Water and NPWS in relation to the development of an memorandum of understanding (MOU) between the two authorities. It is anticipated that the terms of the MOU will cover the following:

- Improved licensing arrangements for Sydney Water easements on parks and reserves;
- Improved system of NPWS determinations of Sydney Water activities on parks and reserves;
- Exchange of information relating to easements and their associated natural and cultural heritage values;
- Application of market based licence fees for easements; and
- Restoration and rehabilitation of damage arising from water and sewerage construction, operation and maintenance works and other appropriate joint projects on NPWS parks and reserves.

Where possible, the requirements of the operating licence are expected to be incorporated within the MOU.

The NPWS is pleased to report an improved working relationship with Sydney Water as a result of the above negotiations. Please contact me 9895 7744 if you require further details.

Yours sincerely

Bob Conroy 22/10/01
BOB CONROY
Director Central

Head Office
43 Bridge Street
P.O. Box 1967
Hurstville NSW
2220 Australia
Tel: (02) 9585 6444
Fax: (02) 9585 6555
www.npws.nsw.gov.au

Mr Maurice Pignatelli
Project Manager
Egis Consulting Australia Pty Limited
PO Box 201
CHATSWOOD NSW 2057

INCOMING CORRESPONDENCE			
DATE IN	24/10/01		
PROJECT NO.	INTL		
PROJECT No.			
FILE NO.			
TO			
A/C			
INTL			

Dear Mr Pignatelli

Thank you for your letter dated 3 October 2001 inviting comments from the Department of Land and Water Conservation (the Department) in relation to the audit of Sydney Water Corporation's Operating Licence. I apologise for the delay in replying.

The Department has reviewed the Operating Licence with specific regard to the attachment to your letter and makes the following specific comments:

1. Part 6, clause 6.6 of the Operating Licence – the Department has no comment on this clause as there are no such requirements in the current water management licence.
2. Part 6, clause 6.7.1 of the Operating Licence – the Department has no comment on this clause as there are no such requirements in the current water management licence.
3. Part 9, section 9.2 of the Operating Licence – (this section should be entitled 'ESD Indicators'). The Department was consulted at appropriate stages during the development of the ESD Indicators. The Department considers SWC's compliance and progress to meeting the requirement as adequate. The relevant condition in the Operating Licence should now be removed or replaced with a condition related to the review of the ESD Indicators.
4. Part 10, section 10.2, clause 10.2.2 of the Operating Licence – the Department has no comment on this clause as there are no such actions taken by DLWC under this clause.
5. Part 3, clause 3.3.1 of the MoU – Sydney Water Corporation has approached the Department for a revised Memorandum of Understanding (MoU) between the two parties. The Department is currently considering the items to be included in the MoU in light of the creation of the Sydney Catchment Authority and the implementation of the Water Management Act 2000.

Demand Management Strategy

The demand management is presently regulated via SWC's Operating Licence, however, on commencement of the licensing provisions of the Water Management Act 2000, the Department will be issuing a "Water Use Approval" to Sydney Water Corporation. This approval will authorise the use of water for Sydney's (and the greater metropolitan region's)

water supplies in accordance with certain conditions. It is possible that the use approval includes provisions for a demand management strategy should it be determined that the use approval is a more appropriate regulatory framework for managing demand than the current Operating Licence arrangements.

I trust that this information will assist you in the audit of Sydney Water Corporation's Operating Licence. Should you have any further queries in relation to this matter, please contact Mr Salim Vhora in the Department's Corporate Water Licensing Unit (at Penrith) on telephone (02) 4722 1116.

Yours sincerely

A handwritten signature in dark ink, appearing to be 'A. Tennie', with a long, sweeping horizontal stroke extending to the right.

For: **A Tennie**
Regional Director

19-10-01

Your Reference : VA0491
Our Reference : SR469; EXF23737
Contact : Warren Hicks, (02) 9555 6802

FAXED
19/2/2002



Mr M Pignatelli
Project Manager
EGIS consulting Australia Pty Ltd
Level 1
67 Albert Street
CHATSWOOD NSW 2067

Director General

19 FEB 2002


Dear Mr Pignatelli


2000/2001 OPERATING LICENCE AUDIT OF SYDNEY WATER CORPORATION

I refer to your meeting on 8 November 2001 with Mr Warren Hicks and Mr Serge Detoffi from the Environment Protection Authority (EPA), to discuss aspects of the 2000/2001 independent audit of the Sydney Water Corporation being undertaken by your firm, and more specifically the EPA's role in this process. I note that the audit covers the period 1 January 2000 to 30 June 2001.

I understand that at the meeting you requested comment on Sydney Water's performance, particularly against specific clauses in Sydney Water's 2000 - 2005 Operating Licence where the EPA's requirements are to be satisfied, or the EPA is to be consulted. I note this information was provided to you informally in December 2001 and this letter confirms that advice. The information requested is presented in the attachment to this letter, in the order of the clauses discussed at the meeting on 8 November.

Please let me know if the EPA can be of further assistance to you in relation to any of these matters.

Yours sincerely


LISA CORBYN
Director-General

Attachment

INCOMING CORRESPONDENCE			
DATE IN	25/2/02		
PROJECT FOR	M Pignatelli	INTL	1/1
PROJECT No.	VA0491		
FILE NO.			
TO			
THRU			
INTL			

ATTACHMENT

2000 - 2001 OPERATING LICENCE AUDIT OF SWC

PART 3 SYDNEY WATER'S RESPONSIBILITIES

3.3 Memorandum of Understanding

The current Memorandum of Understanding (MoU) has technically lapsed. The EPA is currently working with Sydney Water to prepare a new MoU.

PART 6 WATER QUALITY

6.6 Environmental Water Quality

Licence Limit Exceedances

In 2000 – 2001 Sydney Water's coastal and inland sewage treatment plants complied with all licence limit requirements apart from the following four minor exceedances:

- exceedance of 50 percentile total chlorine residual at Bombo STP. No action was taken by the EPA at this time as this was considered a minor breach which did not result in any environmental harm. However, the EPA will monitor ongoing compliance with this condition to see if a generic problem is evidenced;
- exceedance of ninety percentile total phosphorus at Round Corner STP. The EPA took no action as this was considered a minor breach which did not result in any environmental harm. Additionally, as the Round Corner STP was decommissioned in December 2000, the EPA considered that the above incident did not warrant having Sydney Water upgrade the treatment plant for a short-term improvement in effluent quality;
- exceedance of eighty percentile pH limit for irrigated effluent at Picton STP. The EPA decided to not take action against Sydney Water regarding this exceedance as it was found that the elevated pH level in the effluent used for irrigation actually resulted in enhanced crop production. The Picton STP licence was subsequently varied to enable the irrigation of effluent with a higher pH level than previously; and
- exceedance of 3 day suspended solids geometric mean at Richmond STP due to algae outbreaks. As effluent from the Richmond STP is irrigated on adjacent paddocks, it was considered that the presence of algae in the effluent, which affected the 3-day suspended solids geometric mean, did not cause any environmental harm.

In addition to the above exceedances, Sydney Water reported a large number of minor non-conformances relating to small dry weather system bypasses (resulting mainly from tree root and debris blockages and broken

mains) and sample losses. The EPA did not take any action against Sydney Water in regard to the above non-conformances for the following reasons:

- the issue of the small dry weather bypasses is currently being addressed by the EPA through the Pollution Reduction Programs included in all of Sydney Water's sewage treatment system licences as part of its Sewer Overflow Licensing Program; and
- the sample non-collections did not affect the overall result and Sydney Water undertook prompt and appropriate action to remedy the problem(s) which caused samples to not be taken.

Recycled Water/Effluent Reuse

Currently, the EPA still relies on the draft 1995 EPA publication entitled *Environmental Guideline – Use of Effluent in Irrigation* to assess recycled water/effluent reuse schemes. This document is intended to inform, or guide people wishing to install effluent irrigation schemes so that they do not cause pollution. It is not a mandatory document.

If Sydney Water operates such schemes, conditions relating to the reuse of appropriately treated effluent are placed in the sewage treatment system licences for those sewerage systems that supply the treated effluent. If the schemes are privately operated, relevant discharge points are included in the sewerage system licences, to ensure that the quality of effluent provided by Sydney Water to the scheme operators conforms with the quality requirements for the scheme. The onus for ensuring that no water pollution occurs from operation of private schemes lies with the operators of the schemes.

Currently, Sydney Water supplies treated effluent for the following effluent reuse schemes:

- Australian Steel Mills Services in Port Kembla;
- University of Western Sydney at Richmond;
- Kiama Golf Club;
- Dunheved Golf Club at St Marys;
- Ashlar Golf Club at Blacktown;
- Castle Hill Golf Club;
- Hickey's Reserve at Penrith;
- Warwick Farm Racecourse; and
- An effluent irrigation scheme at Picton.

All of the above schemes, except for that at Picton which is managed by Sydney Water, are privately operated.

The EPA is satisfied that the quality of treated effluent supplied to the schemes by Sydney Water is of a suitable quality, and that the schemes are properly operated.

PART 9 ENVIRONMENT – INDICATORS & PLANS

9.2 Ecologically Sustainable Development Indicators

The EPA participated in the process by Sydney Water to develop a list of Ecologically Sustainable Development (ESD) Indicators, through the review and comment on the draft list prepared in March 2000. The EPA's comments were subsequently considered by Sydney Water and incorporated in the final list which was gazetted in July 2000. A Public Consultation Report on Sydney Water's ESD Indicators list was released in January 2001.

9.5 Botany Wetlands

The EPA was represented on the Botany Wetlands Task Force which was chaired by Sydney Water's Robyn Sim.

Good progress has been made in the control of noxious weeds and the minimisation of algal blooms. Overall, there were no major amendments required to the Botany Wetlands Plan of Management.

The EPA is of the opinion that Sydney Water's performance in this area has been satisfactory.

APPENDIX I
DISCUSSION OF SYSTEM PERFORMANCE

I. FURTHER DISCUSSION OF SYSTEM PERFORMANCE

I.1 Compliance with System Performance Standards

I.1.1 General

Audits

Some of the audit findings included concerns or opportunities for improvement such as:

- Error identification not occurring on pressure recording charts (Internal - July 2000).
- Training record not being available detailing the receipt of training and extent of training undertaken (Internal – July 2000).
- Staff unclear about where training records held (QAS - February 2001).
- Use of uncontrolled quality documents (QAS - February 2001).
- Confirmation of initial and ongoing calibration of gauges used for water pressure recording (QAS - May 2001).
- Improve quality awareness training (QAS - May 2001).

Attention to all of these aspects is necessary to provide full confidence in the data recording and reporting system.

Reporting

The performance reporting against system standards uses total property numbers in the denominator to calculate percentages of properties not affected. The number of properties is defined as *all properties connected* to the water supply or sewerage system. This is interpreted by Sydney Water to include all residential, commercial, industrial and community service properties, mixed development, occupied land, strata properties, vacant land, utilities and sundry services (including standpipes), and individual flats, but not unconnected strata garages or overall metered services to flats which are otherwise counted. It is assumed that vacant land is unconnected, and that standpipes and other sundry metered services are connected but may not meet the definition of a property.

Strategies, Plans and Programs to Ensure Compliance

These are discussed in the relevant sections below to the extent required to satisfy the auditors that Sydney Water is at least maintaining service levels, is able to respond to changing circumstances (such as amended service standards, or climatic events that can cause increased water main breaks or more overflows), and has a continuous improvement process in place. The audit scope does not provide for a more detailed review of these strategies, and has not included assessment of the adequacy of risk management processes, the extent of understanding of long term asset performance, the basis for prioritisation of works, or the cost-effectiveness of repair/renewal decisions. These aspects are considered to be relevant to a specific asset management component of a future audit.

I.2 Drinking Water Continuity

Measuring and Recording of Data

The field crew team leader on site initially identifies the number of properties affected by an interruption. This is checked and recorded on WAMS through definition of the length of water main affected, and the automated counting of properties affected in HYDRA after manually defining the area affected. HYDRA is

linked to the ACCESS database that links the property to the customer. As there is no automated link established in the HYDRA GIS between the asset and each property, this process could be subject to error and either nominally overcount or undercount the number of properties affected. This process is the basis for both the reporting of compliance and customer redress, so Sydney Water makes all reasonable efforts to define the correct number of properties affected. A high number of complaints received due to the failure of Sydney Water to provide redress would indicate the likelihood of errors in counting of properties affected. Sydney Water advised that there were few complaints from this cause.

Strategies, Plans and Programs to Ensure Compliance

The standards for 2001/02 remain unchanged from those applicable to this audit. Normal practice now provides for assessment of water main maintenance activity to ascertain if the work can be undertaken without causing a service interruption. This now occurs in about 20% of break repairs. The above indicates that Sydney Water has adequately provided to maintain its level of service for drinking water continuity.

Standards for continuity for 2001/2002 have been amended and are slightly tighter than those applicable for this audit. The IPART Review of System Performance Standards in Sydney Water's Operating Licence, indicates that the amended standard for continuity is easily achievable by Sydney Water. This appears to assume that Sydney Water's asset management practices remain relatively constant into the future.

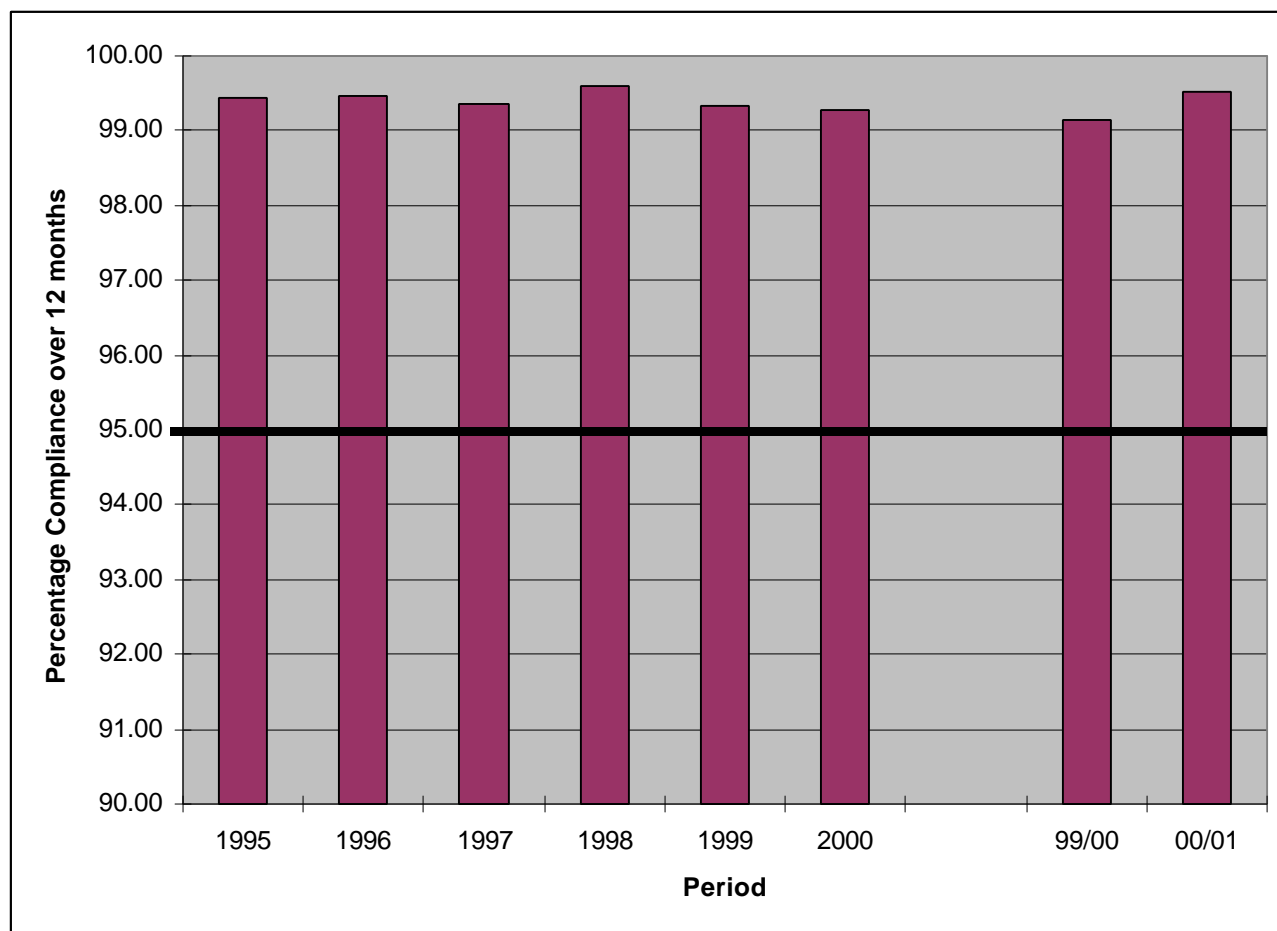
Historical Performance

Performance of Sydney Water over the duration of the Licence is tabulated and graphed below. Performance over the 18-month period of this audit has been consistent with previous periods, with no significant change noted over time.

Table I.1: Drinking Water Continuity – Historical Compliance Achieved

Year	Compliance (%)
1995	99.44
1996	99.46
1997	99.35
1998	99.60
1999	99.33
2000	99.28
1999/2000	99.14
2000/2001	99.52

Figure I.1: Drinking Water Continuity – Historical Compliance Achieved



I.3 Drinking Water Pressure

Measuring and Recording of Data

Low pressure instances can be detected in a number of ways:

- Pressure monitoring stations, comprising 64 telemetered stations, 135 wound chart recorders, 60 data loggers, 95 portable data loggers, and 167 reservoir pressure telemetered stations. Sydney Water is replacing all the older technology stations (wound chart recorders and data loggers) and extending the network with 360 telemetered stations under the Integrated Instrumentation Control and Telemetry System (IICATS) project. The location of the monitoring stations is determined by Sydney Water to cover areas likely to experience low water pressure (e.g. elevated areas), through historical data or system modelling.
- Water system zone modelling. Sydney Water reports it has developed models for all water supply zones, and updates models as required in zones where development is occurring and additional water demands may cause water pressure reductions.
- Water pressure service requests and complaints. These are responded to by field staff and recorded under the Job Card system as for water continuity. Temporary gauges may be installed to record low pressure. Very few instances of low pressure are determined from complaints or customer calls.

Pressure monitoring records are manually reviewed (for chart recorders or data loggers) or automatically detected (for telemetry stations) to record instances of low pressure. Constant pressures are assumed

within the area around the recorder and no allowance is made for pressure losses due to flow. This can create some inaccuracies in defining the number of properties affected, but is considered reasonable.

Uncertainties can occur in the detection of instances of low pressure, (for example: if chart recorders or data loggers are faulty, the charts are not changed appropriately at chart recorder sites, or in the manual review of chart records and data loggers) which can result in some instances not being recorded. Data provided by Sydney Water indicated that data capture for some of the mechanical chart recorders were as low as 50%, whereas it is above 95% for data loggers. This process will improve in accuracy as the IICATS project is implemented, due to the replacement of unreliable equipment and the automated detection of low-pressure instances.

Strategies, Plans and Programs to Ensure Compliance

Standards for water pressure for 2001/2002 have been amended and are slightly tighter than those applicable for this audit. The IPART Review of System Performance Standards in Sydney Water's Operating Licence, indicates that the amended standard for continuity is easily achievable, based on historical performance, even with the inclusion of properties in the former low pressure areas. This appears to assume that Sydney Water's asset management practices remain relatively constant into the future. Sydney Water's performance should in fact improve over the next 5 years, given the investment recently approved.

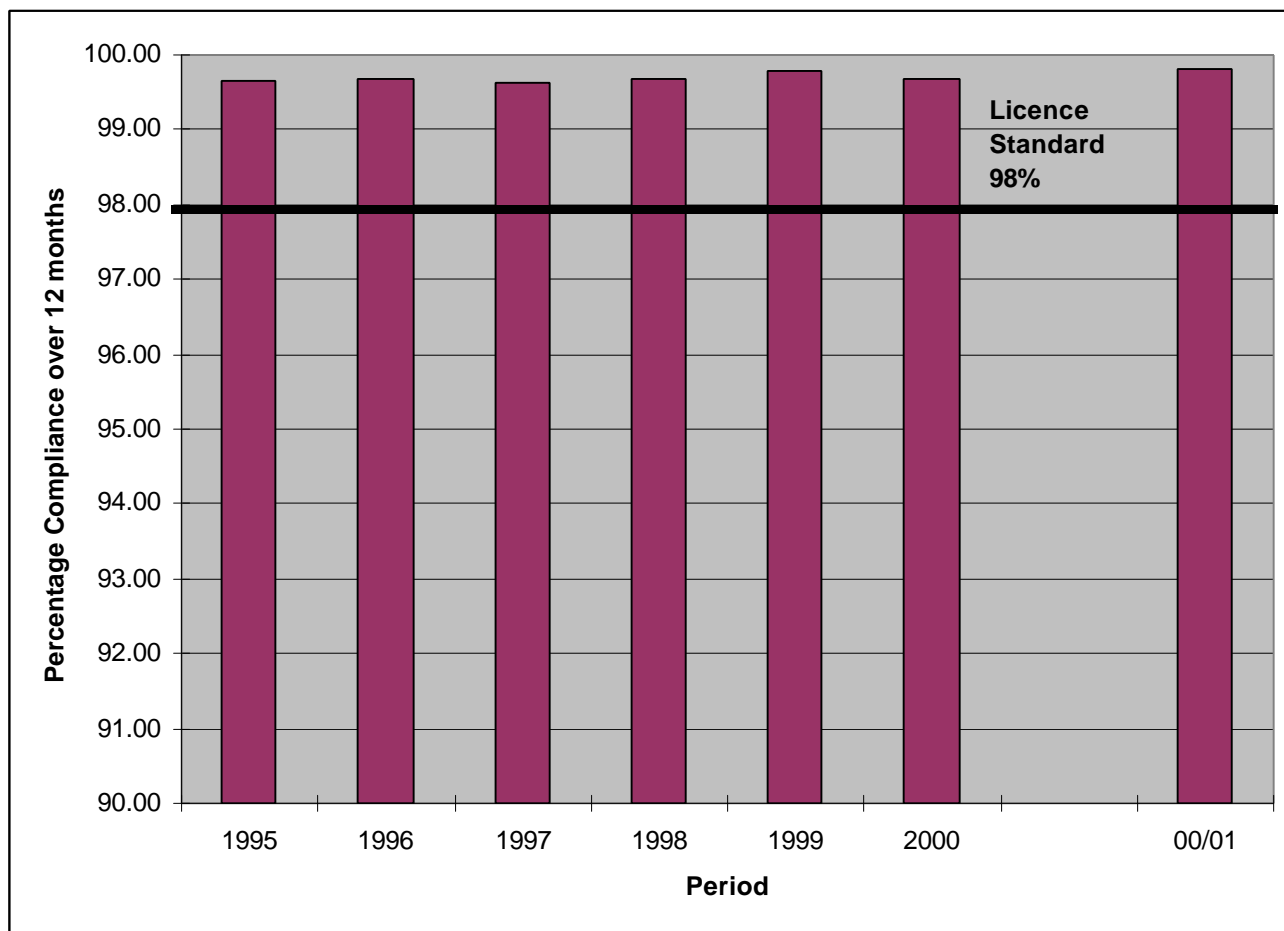
Historical Performance

Performance of Sydney Water over the duration of the Licence is tabulated and graphed below. Performance over the 18-month period of this audit has been consistent with previous periods. The high level of compliance appears to show progressive improvement as problem areas are addressed.

Table I.2: Water Pressure – Historical Compliance Achieved

Year	Compliance (%)
1995	99.64
1996	99.68
1997	99.62
1998	99.67
1999	99.78
2000	99.68
2000/2001	99.81

Figure I.2: Water Pressure – Historical Compliance Achieved



I.4 Sewage Overflows

Measuring and Recording of Data

In some cases the customer calls a plumber to attend to the problem, who then notifies Sydney Water if it is believed that the problem arises from the sewerage system. If this is the case, Sydney Water staff attend the site to assess the responsibility for any overflow. The converse also occurs, when Sydney Water is called to attend an overflow that is in a private drain, and is thus not counted in the Sydney Water statistics. Overflows can also occur from system failure, and these are normally detected via Sydney Water's system monitoring on pump stations.

The identification of properties affected is initially undertaken by the field crew team leader, who should indicate on a plan the area of land affected by the overflow in relation to visible boundaries. This is manually entered on the HYDRA GIS to confirm the number of properties affected. This may result in some change to the number as the property boundaries or number of properties affected may not be visible on site (e.g. strata title).

Strategies, Plans and Programs to Ensure Compliance

Standards for sewage overflows for 2001/2002 have been amended and are slightly tighter than those applicable for this audit. The IPART Review of System Performance Standards in Sydney Water's Operating Licence, indicates that the amended standard for sewage overflows still leaves a reasonable margin above the highest recorded value (over the past 5 years) to allow for significant events. This appears to assume that Sydney Water's asset management practices remain relatively constant into the

future. Sydney Water's performance should in fact improve over the next 5 years, given the investment recently approved.

Historical Performance

Performance of Sydney Water over the duration of the Licence is tabulated and graphed below. Performance over the 18 month period of this audit has been consistent with previous periods, albeit showing a small decline in recent years. The reasons for this trend have not been evaluated.

Table I.3: Sewer Overflows – Historical Compliance Achieved

Year	Compliance (%)
1995	99.79
1996	98.79
1997	99.86
1998	98.72
1999	99.06
2000	99.18
1999/2000	99.21
2000/2001	99.04

Figure I.3: Sewer Overflows – Historical Compliance Achieved



I.5 Low Pressure Areas

Overall, 95.10% of all properties in DLWPAs were unaffected by water pressure below the standard, but 90% compliance was not achieved for two of the eight DLWPAs: Bayview and Llandilo. The above performance is depicted graphically below. As these standards did not apply to previous periods, no historical comparison is given.

Measuring and Recording of Data

Some of these stations were not installed or upgraded at the commencement of the 18-month reporting period, but all were installed by the commencement of application of the standard on 12 May 2000. According to a submission to Sydney Water's Board dated 31/3/2000, updating of documentation and training of staff was required in the new standards, and collection of data to the new standard was to commence in the following cost period. In addition, repeat incidents needed to be re-analysed back to 1/1/2000. Formal implementation by 1/7/2000 was proposed. The above casts a level of doubt on the accuracy of recording and reporting of data during the first 5 months of the reporting period, although this is unable to be verified.

Strategies, Plans and Programs to Ensure Compliance

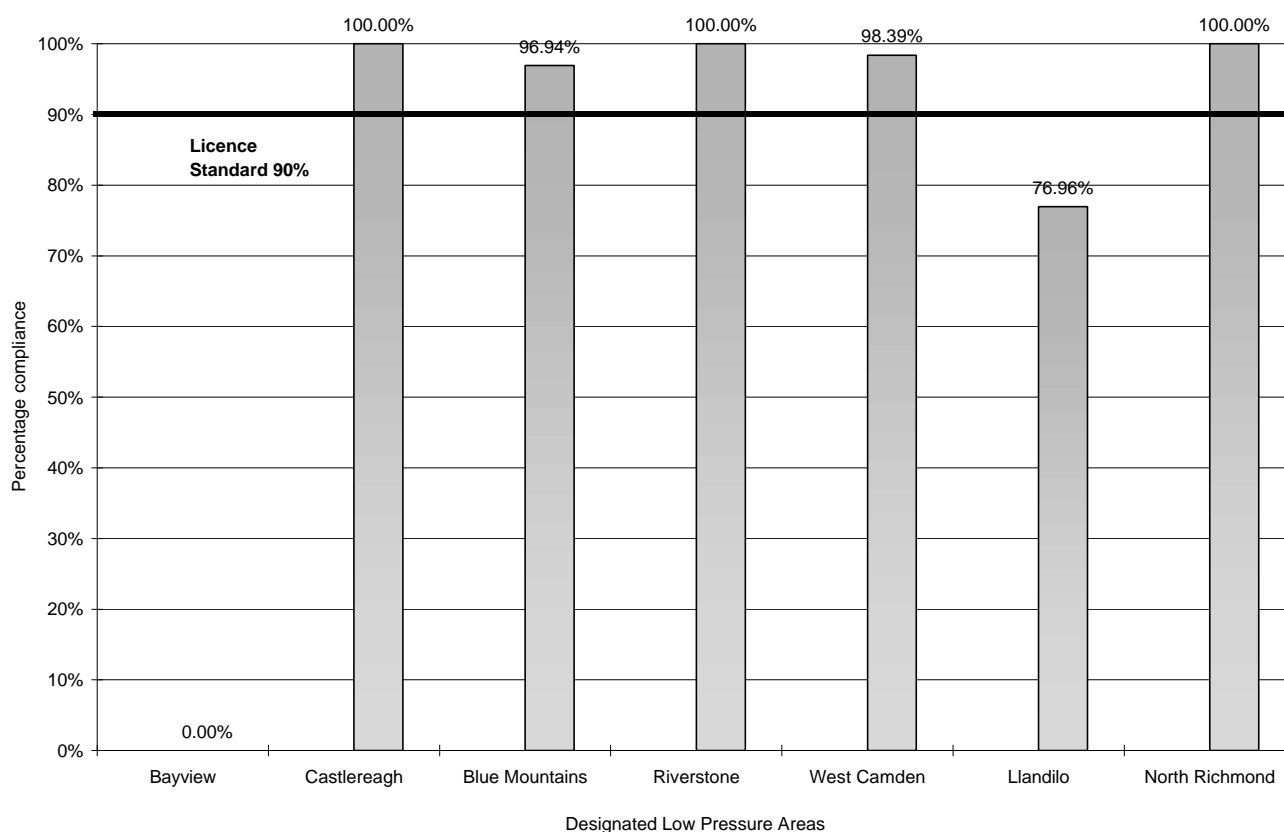
The works are programmed over a 5 year period so that some properties will not see improvements until 2006. The package does not include areas which:

- Do not have a current pressure problem due to effective Council controls on development,

- Are already part of separately funded projects, or

The land is subject to rezoning/redevelopment in the next 5 years, which will change the nature of infrastructure required to serve the area.

Figure I.4: DLWPAs Compliance with Pressure Standard



II. MINISTERIAL DIRECTIVE – REDUCING UNSEWERED PROPERTIES

The key indicators of compliance with the Minister's directive are:

- Ensuring the Minister is fully appraised of progress through regular progress reports.
- Achieving progress in reducing the number of unsewered properties.
- Giving due consideration to community requirements.
- Giving due consideration to environment and public health requirements.

The Sydney Water 2000-2005 Environment Plan, published in September 2000 states that *“The current NSW Government strategy with respect to these areas is to assess the need for alternative services through a program of prioritisation which targets areas with high environmental and public health risks. Twelve areas are currently identified as high priority in which planning and construction works are underway.*

The NSW Government is currently undertaking investigations to determine the priority for provision of upgraded sewage services in the remaining unsewered areas. Upgraded sewage services will be provided based on the outcomes of those investigations.”

The Environment Plan Action 2.3 is to "Provide sewerage services to currently unsewered areas in accordance with agreed government priorities and funding arrangements" with a Target of "Sewerage services provided to the twelve high priority areas on the Priority Sewage Program by end of 2004".

Table I.1: Schedule for Forecast Sewer Connections 1999 to 2000/01

Year	1999 Operational Audit		2000/2001 Operational Audit	
	No. of Connections Made Available in Year	Cumulative No. of Connections Available	No. of Connections Made Available in Year	Cumulative No. of Connections Available
1998	163	796	163	796
1999	352	1,148	513	1,309
2000	5,595	6,743	3,594	4,903
2001	2,680	9,423	1,853	6,756
2002	1,081	10,504	2,739	9,495
2003	2,825	13,329	2,846	12,341
2004	1,440	14,769	1,816	14,157

Sydney Water advised that the schedule for progress of some planned works has been affected by the need for extensive community consultation and environmental assessment processes.

Sydney Water has prepared a strategy for extension of the Priority Sewerage Program to 19 other unsewered areas within its area of operations that were identified by the EPA as having high environmental priority. This strategy was not yet available for release and was not reviewed by the auditors.

It should be noted that the effectiveness of a new sewerage scheme to meet the objectives of improving environmental and public health is entirely dependent on the households served by the scheme actually connecting to the scheme. Sydney Water is finding that where the local Council does not mandate connection, the connection rate is generally only up to 80%. Sydney Water recognises the importance of achieving the highest possible connection rate possible and has established a team to develop ways to assist customers to connect to the scheme when available.

III. MINISTERIAL DIRECTIVE – STRATEGIC FRAMEWORK OF ASSET MANAGEMENT

Interpretation

The key indicators of compliance with the Minister's directive are:

- Providing the Minister with a report which:
 - covers the main components of Sydney Water's asset planning and decision making process;
 - provides for reviews of system performance standards; and
 - addresses deployment of the strategy through operations, maintenance and asset creation plans.
- Demonstrated progressive development and deployment (at the time of the audit) of detailed asset plans within the strategy consistent with a two year timeframe to completion;

- Submission of the report by 31 December 2000.

The audit assesses compliance with each of the above key indicators, but does not provide a detailed analysis of the adequacy of the strategy or any of its component elements. This is properly the subject of a specific asset management component to a future audit.

Report Coverage

It would assist the reader if the hierarchy of these strategies, their interrelationship and improvement programs were identified in this Strategy (a Hierarchy of Plans was provided separately).

The Strategy defines customer and community needs through a number of means, including:

- Customer/stakeholder surveys and consultation;
- Operating Licence and Customer Contract;
- The Sydney Water Act, which requires Memoranda of Understanding with NSW Health, Environmental Protection Authority, and the Water Administrative Ministerial Corporation (DLWC) for drinking water quality and environmental standards; and
- Other regulatory processes.

There is no specific mention of the Licence requirement for review of performance standards, although this could be seen as being implied. The Strategy outlines the System Performance Standards applicable at the time the report was submitted (December 2000), and has not been updated since the Standards were modified.

There is no other reference in the Strategy to a program of development of strategy elements, or of deployment of the strategy within Sydney Water. Consequently, the Strategy is not seen as sufficient in itself to provide guidance within Sydney Water on implementation. The Folio of Progress similarly does not provide any information on implementation. A Board paper (undated) was provided which outlined the key tasks required for each of the areas for improvement identified above, and providing a timeframe for implementation. This indicated completion of all key tasks by the end of 2002 (i.e. within 2 years of the strategy report to the Minister). Updates on progress were proposed every 6 months. A Transitioning Plan for Asset Planning Processes (November 2000) also exists, which appears to provide a timetable for implementing a new approach to asset planning, but is not referenced in the Strategy.

APPENDIX J
PUBLIC SUBMISSIONS TO IPART



INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

2000/01 Operational Audit of
SYDNEY WATER CORPORATION

Public submissions

The Independent Pricing and Regulatory Tribunal is required to assess Sydney Water Corporation's performance as part of the annual audit of its Operating Licence.

You are invited to comment on any matter relating to Sydney Water's Operating Licence including water quality, wastewater treatment, service interruptions, sewer surcharges, water pressure and customer service. Copies of the Operating Licence are available online at www.sydneywater.com.au, Sydney Water Corporation Offices, or by phoning 13 20 92.

Unless a specific request is made for confidentiality, submissions will be made available to the public. Any claim for confidentiality should be clearly displayed on the front of the submission.

Written comments must be received by **Monday 3 September 2001**. Submissions should be sent to the address below. If you have any questions please contact Bob Burford on (02) 9290 8408.

Thomas G Parry

Level 2

PO Box Q290

Chairman

44 Market Street

QVB Post Office

10 July 2001

SYDNEY NSW 2000

NSW 1230

PUBLIC SUBMISSIONS TO IPART

One submission was received in response to the IPART advertisement inviting Public Submissions . A description of the submission is presented below. The auditors finding in relation to this submission is presented in Table 10.2 of this report, under clauses 12.2.5(d) and 12.2.9(g).

SUBMISSION FROM MR B. FINDLAY

During the course of the Audit, a public submission was received from Mr Brian Findlay of Bexley. In his submission, Mr Findlay raises the issue of stormwater flooding and the adequacy of Sydney Water's stormwater infrastructure. An open stormwater channel operated by Sydney Water traverses the property and the vacant block of land next door that belongs to Mr Findlay's son, Jason. Mr. Findlay claims where the open stormwater channel leaves Jason Findlay's property it goes under a road via an enclosed drain which for a length of approximately 21 metres is smaller than the downstream channel.

Mr Findlay reported that in April 1998, heavy rainfall across Sydney resulted in flooding to both properties, with considerable loss of property. As a result of the flooding impacts, the Findlay's are seeking the enclosure or upgrading of the stormwater channel by Sydney Water. This matter has been an ongoing issue for a number of years and is yet to be resolved.

Mr. Findlay's submission is available from the Tribunal.