

Reference: ADWG: Australian Drinking Water Guidelines (National Health & Medical Research Council and Natural Resource Management Ministerial Council, 2004); Chapters 2 & 3 Framework for Management of Drinking Water Quality

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| <p>0. Understand the philosophy of drinking water quality management as outlined in ADWG (chapter 2)</p> | <p>0.1 The use and benefits of the Framework as a preventive strategy for drinking water quality management from catchment to consumer is described.</p> | <p>The application of the Framework to guide the design of a structured and systematic approach for the management of drinking water quality from catchment to consumer, to assure its safety and reliability, are defined, as described in ADWG 2.1.</p> <p>The four general areas of the Framework (as listed below) and their relationships are defined, as described in ADWG 2.2.</p> <ol style="list-style-type: none"> 1. Commitment to drinking water quality management. 2. System analysis and management. 3. Supporting requirements. 4. Review. <p>The benefits of the Framework in the management of drinking water quality through a comprehensive preventive strategy by providing an overall framework are defined, as described in ADWG 2.3.</p> <p>The need for multi-agency involvement in the application of the Framework is defined, as described in ADWG 2.4.</p> <p>Methodologies for applying the Framework are defined, as described in ADWG 2.5.</p> <p>Correlations of the Framework with other systems are defined, as described in ADWG 2.6.</p> |

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| 1. Understand requirements for commitment to drinking water quality management | 1.1 Requirements for drinking water quality policy are defined. | <p>The requirement that a drinking water quality policy is formulated, endorsed by senior executive and implemented throughout the organisation is described.</p> <p>The requirement to ensure that the policy is visible and is communicated, understood and implemented by employees is described.</p> <p>Methods of ensuring that the policy is communicated, understood and implemented by employees are described.</p> |
| | 1.2 Regulatory and formal requirements related to drinking water quality management are defined. | <p>All relevant regulatory and formal requirements that are required to be documented are identified.</p> <p>Methods of identifying if regulatory and formal requirements are reviewed periodically are described.</p> <p>Methods for identifying that responsibilities are understood and communicated to employees are described.</p> |
| | 1.3 Methods for engaging stakeholders are defined. | <p>Methods used to identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier are described.</p> <p>Appropriate mechanisms and documentation for stakeholder commitment and involvement are described.</p> <p>Methods used to identify relevant agencies and to provide updated information to these agencies are described.</p> |
| 2. Assessment of the drinking water supply system | 2.1 Requirements related to drinking water supply system analysis are defined. | <p>Issues to consider when assembling a team with appropriate knowledge and expertise are identified.</p> <p>Requirement for development of a flow diagram of the water supply</p> |

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| | | <p>system from catchment to consumer is identified..</p> <p>Information pertinent to the water supply system as it relates to drinking water is defined.</p> <p>Key characteristics of the water supply system are identified.</p> <p>The requirement to periodically review the water supply system analysis is identified.</p> |
| | <p>2.2 Requirements for assessment of water quality data are defined.</p> | <p>The requirement to assemble historical data from source waters, treatment plants and finished water supplied to consumers (over time and following specific events) is identified.</p> <p>The requirement to list and examine exceedances is identified.</p> <p>Methods used to assess data using tools such as control charts and trends analysis to identify trends and potential problems are described.</p> |
| | <p>2.3 Methods of hazard identification and risk assessment are defined.</p> | <p>Approaches and methodology to be used for hazard identification and risk assessment from catchment to consumer are described.</p> <p>The requirement to identify and document hazards, sources and hazardous events for each component of the water supply system from catchment to consumer is identified.</p> <p>Methods used to estimate the level of risk for each identified hazard or hazardous event are described.</p> <p>Methods used to evaluate the major sources of uncertainty associated with each hazard and hazardous event are described.</p> <p>Evidence to confirm that actions to reduce uncertainty were considered is described.</p> |

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| | | <p>Methods used to determine significant risks and priorities for risk management are described.</p> <p>The requirement to periodically review and update the hazard identification and risk assessment to incorporate any changes is identified.</p> |
| <p>3. Preventive measures for drinking water quality management</p> | <p>3.1 Requirements for preventive measures and multiple barrier are defined.</p> | <p>Methods used to identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and to estimate the residual risk are described.</p> <p>Methods used to evaluate alternative or additional preventive measures where improvement is required are described.</p> <p>The requirement to document the preventive measures and strategies into a plan addressing each significant risk is identified.</p> |
| | <p>3.2 Requirements for critical control points are defined.</p> | <p>Methods used to assess preventive measures from catchment to consumer to identify critical control points are described.</p> <p>The requirement to establish mechanisms for operational control is identified.</p> <p>The requirement to document the critical control points, critical limits and target criteria is identified.</p> |
| <p>4. Operational procedures and process control</p> | <p>4.1 Requirements for operational procedures are defined.</p> | <p>Procedures required for processes and activities from catchment to consumer are described.</p> <p>Requirement to document all procedures and compile these into an operations manual is identified.</p> |

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| | 4.2 Requirements for operational monitoring are defined. | <p>Monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results, are described.</p> <p>Requirement to document monitoring protocols into an operational monitoring plan is identified.</p> |
| | 4.3 Requirement for corrective action is defined. | <p>Methods used to establish and document procedures for corrective action to control excursions in operational parameters are identified and described.</p> <p>The requirement to establish rapid communication systems to deal with unexpected events is identified.</p> |
| | 4.4 Requirements for equipment capability and maintenance are defined. | <p>Methods to ensure that equipment performs adequately and provides sufficient flexibility and process controls are described.</p> <p>The requirement to establish a program for regular inspection and maintenance of all equipment, including monitoring equipment is identified.</p> |
| | 4.5 Requirements for use of materials and chemicals are defined. | <p>Methods to ensure that only approved materials and chemicals are used are described.</p> <p>The requirement to establish documented procedures for evaluating chemicals, materials and suppliers is identified.</p> |
| 5. Verification of drinking water quality | 5.1 Methods for monitoring drinking water quality are defined. | <p>The characteristics to be monitored in the distribution system and in water as supplied to the consumer are described.</p> <p>The requirement to establish and document a sampling plan for each characteristic, including the location and frequency of sampling is identified.</p> |

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| | | Methods to ensure monitoring data is representative and reliable are described. |
| | 5.2 Processes to measure consumer satisfaction are defined. | Methods used to manage a consumer complaint and response program, including appropriate training of employees, are described. |
| | 5.3 Methods for short-term evaluation of results are defined. | The requirement to establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction is identified. Methods used for reporting mechanisms internally, and externally, where required, are described. |
| | 5.4 Requirements for corrective action are defined. | The requirement to establish and document procedures for corrective action in response to nonconformance or consumer feedback is identified. Methods used for rapid communication systems to deal with unexpected events are described. |
| 6. Management of incidents and emergencies | 6.1 Requirements for effective communication are defined. | Communication protocols, including involvement of relevant agencies and the need to establish a contact list of key people, agencies and businesses, are described. Methods for the development of a public and media communications strategy are described. |
| | 6.2 Requirements for incident and emergency response protocols are defined. | Methods to define potential incidents and emergencies are described. The requirement to document emergency procedures and response plans with the involvement of relevant agencies is identified. |

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| | | <p>The requirement to train employees and regularly test emergency response plans is identified.</p> <p>Methods used to investigate any incidents or emergencies and revise protocols as necessary are described.</p> |
| 7. Employee awareness and training | 7.1 Methods to ensure employee awareness and involvement are defined. | Methods used to develop mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management are described. |
| | 7.2 Requirements for employee training are defined. | <p>The requirement to ensure that employees, including contractors, maintain the appropriate experience and qualifications is identified.</p> <p>Methods used to identify training needs and ensure resources are available to support training programs are described.</p> <p>The requirement to document training and maintain records of all employee training is identified.</p> |
| 8. Community involvement and awareness | 8.1 Requirement for community consultation is defined. | <p>Methods used to assess requirements for effective community involvement are described.</p> <p>Methods used to develop a comprehensive strategy for community consultation are described.</p> |
| | 8.2 Methods of communication are defined. | Methods used to develop an active two-way communication program to inform consumers and promote awareness of drinking water quality issues are described. |

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| 9. Research and development | 9.1 Requirements for investigative studies and research monitoring are defined. | <p>The requirement to establish programs to increase understanding of the water supply system is identified.</p> <p>Methods to use information to improve management of the water supply system are described.</p> |
| | 9.2 Requirement to validate processes is defined. | <p>Methods used to validate processes and procedures to ensure that they are effective at controlling hazards are described.</p> <p>The requirement to revalidate processes periodically or when variations in conditions occur is identified.</p> |
| | 9.3 Requirements for design of equipment are defined. | <p>Methods used to validate the selection and design of new equipment and infrastructure to ensure continuing reliability are described.</p> |
| 10. Documentation and reporting | 10.1 Requirements for Management of documentation and records are defined. | <p>The requirement to document information pertinent to all aspects of drinking water quality management is identified.</p> <p>Methods used to develop a document control system to ensure current versions are in use are described.</p> <p>The requirement to establish a records management system and ensure that employees are trained to fill out records is identified.</p> <p>The requirement to periodically review documentation and revise as necessary is identified.</p> |
| | 10.2 Reporting requirements are defined. | <p>The requirement to establish procedures for effective internal and external reporting is identified.</p> <p>The requirement to produce an annual report to be made available to consumers, regulatory authorities and stakeholders is identified.</p> |

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| 11. Evaluation and audit | 11.1 Requirement for long-term evaluation of results is defined. | <p>Methods used to collect and evaluate long-term data to assess performance and identify problems are described.</p> <p>The requirement to document and report results is identified.</p> |
| | 11.2 Requirement to audit drinking water quality management is defined. | <p>The requirement to establish processes for internal and external audits is identified.</p> <p>The requirement to document and communicate audit results is identified.</p> |
| 12. Review and continual improvement | 12.1 Requirement for review by senior executive is defined. | <p>The requirement for senior executive review of the effectiveness of the management system is identified.</p> <p>Methods used to evaluate the need for change are described.</p> |
| | 12.2 Requirement for a drinking water quality management improvement plan is defined. | <p>Methods used to develop a drinking water quality management improvement plan are described.</p> <p>The requirement to ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness, is identified.</p> |