

Training Workbook

on Water Safety Plans for Urban Systems



World Health
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Western Pacific Region

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Abbreviations

AusAID	Australian Agency for International Development
BAC	Biological activated carbon
CT	Contact time (chlorine)
GDWQ	Guidelines for Drinking Water Quality
HACCP	Hazard Analysis Critical Control Point
HOCl	Hypochlorous acid
ISO	International Organization for Standardization
MWSI	Maynilad Water Services, Inc
RABQSA	Registrar Accreditation Board Quality Society of Australasia
THMs	Trihalomethanes
USEPA	United States Environmental Protection Agency
WHO	World Health Organization
WPRO	Western Pacific Regional Office
WSPs	Water Safety Plans

Foreword

Every year, thousands of deaths due to diarrhea, cholera, typhoid and other gastrointestinal diseases have been attributed to poor water, sanitation and hygiene not just in this region but globally. Diarrheal diseases could be avoided if water suppliers would ensure the safety of drinking water from source to consumer. Guided by the national drinking water regulations, the health based targets of maximum allowable concentration for microbiological, chemical, physical and radiological parameters in drinking water could be achieved through the application of the multiple barrier approach to risk management in water supply. This is the overall principle and goal of Water Safety Plans.

This workbook is intended to be used for training within the Region emphasizing a systematic and preventive risk-based approach to avoid drinking water contamination towards improvement of public health. The strategy is to use multiple barriers so that if one barrier fails, the water stays safe. The intended users are possibly water supply practitioners at all levels especially water quality managers, operators, regulators, assessors, academics, consultants, NGOs, and international organizations.

WHO has introduced Water Safety Plan (WSP) in the 3rd Edition of the WHO Guidelines for Drinking Water Quality to provide a systematic approach for improving and maintaining drinking water safety. This training material is intended to provide participants with an understanding of the key concepts of the WSP and how to further communicate those concepts to others in future training sessions. The training should also provide a networking opportunity for WSP trainers to get together and discuss WSP training experiences with a view to maintaining a long-term network of mutual support to help facilitate WSP implementation.

The objective of this workbook is to serve as a guide to facilitate WSP development for an organized water supply that is managed by a water utility or similar entity. WSPs can be tailored differently for each specific water supply system. This workbook is generic and is not specific to any particular country. It is anticipated that trainers in each country would develop their own WSP training material which would be linked directly to country drinking water standards and implementing guidelines as well as being written in other appropriate languages.

The workbook is intended to be used in a step wise fashion, to guide the user through each step in the development of a WSP. Each step has been described concisely in the body of the text with detailed examples to help illustrate what is involved at each step. A set of pro forma worksheets are given in Appendix A which, if completed for a specific system, will provide a first draft of a WSP. A sample WSP is also provided in Appendix B based on an actual WSP case study developed and implemented in the region. The draft Water Safety Plan should be revised accordingly as more information and experience is gained during its implementation.

The document is structured according to the WSP developed by WHO and draws from a worldwide body of practical experience. It begins with an introductory section designed to orient the user and facilitate the process of starting a WSP. The document addresses each WSP step and provides the following information: (a) what each step involves; (b) an explanation of each step including examples; and (c) examples of exercise sheets (Annex A) that can be used to complete the WSP.

The WSP book "Annette Davison, Guy Howard, Melita Stevens, Phil Callan, Lorna Fewtrell, Dan Deere and Jamie Bartram (2005) Water safety plans: Managing drinking-water quality from catchment to consumer" can be accessed from the Internet at:

www.who.int/water_sanitation_health/dwq/wsp0506/en/.

Another good resource is the WHO WSP Portal at:

www.who.int/wsportal/en/

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