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Guidelines for health risk assessment and management for non-potable water reuse

*Lignes directrices pour l'appréciation et la gestion du risque pour la
santé relative à la réutilisation de l'eau pour des usages non potables*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 282, *Water Reuse*, Subcommittee SC 3, *Risk and performance evaluation of water reuse systems*.

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Introduction

The reaffirmation of the importance of water along with food security and energy was a significant outcome in the actions and the follow-up framework passed at the United Nations Conference on Sustainable Development (Rio+20). Water is an indispensable resource for sustainable development including the eradication of poverty and hunger, public hygiene, food security, water power, agriculture, and development of farming and remote communities. In the management of water resources, essential actions include: the prevention of water contamination by households, industries, and agriculture; more efficient water usage and the treatment and reuse of wastewater as a water resource, particularly in growing urban areas.

Today, with many regions of the world facing potable water shortages, wastewater reuse can provide an alternative water source that is suitable for satisfying the majority of water demands, with the notable exception of drinking and cooking which require higher water quality. On the other hand, increased water reuse practices are raising concerns regarding potential health implications across the world. This has led to an increasing need to specify water quality parameters that are appropriate to specific water applications and uses, as well as the development of methods to assess and manage health risks from both regulator and user sides. Unless these needs are addressed, opportunities for sustainable development in the form of appropriate use of reclaimed water will be lost.

Direct or indirect contact with reclaimed water may have health implications for individuals, regardless of whether they are the intended users of the reclaimed water or not. Contact with reclaimed water can occur during the collection and treatment of wastewater, treated water storage and distribution, the use of reclaimed water, or after use. Health risks may also be present during the operations and/or maintenance work of the facilities and processes. These health implications can be moderate in some cases and serious in others, and continue for a short, moderate, or long period of time.

This document can be useful for the application of management system standards, such as ISO 9001 and risk management standards, such as ISO 31000.