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Water reuse in urban areas — Guidelines for water reuse safety evaluation — Assessment parameters and methods

*Réutilisation de l'eau en milieu urbain — Lignes directrices
concernant l'évaluation de la sécurité de la réutilisation de l'eau...
Paramètres et méthodes d'évaluation*



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	1
5 Water reuse safety	2
6 Water reuse safety parameters	2
7 Framework for safety evaluation of water reuse in urban areas	4
8 Water quality parameters selection for water reuse in urban areas	5
8.1 General.....	5
8.2 Parameter considerations for environmental and recreational uses in urban areas.....	6
8.2.1 General.....	6
8.2.2 Important aspects for safety and public acceptance considerations.....	6
8.2.3 Water quality parameters of interest.....	6
8.3 Parameter considerations for municipal non-potable uses in urban areas.....	7
8.3.1 General.....	7
8.3.2 Important aspects for safety and public acceptance considerations.....	7
8.3.3 Water quality parameters of interest.....	8
8.4 Parameter considerations for other uses in urban areas.....	10
8.4.1 Important aspects for safety and public acceptance considerations.....	10
8.4.2 Water quality parameters of interest.....	11
9 Water reuse safety evaluation	12
9.1 General.....	12
9.2 Water quality parameters and criteria selection.....	12
9.3 Water quality monitoring.....	13
9.4 Safety evaluation in water reuse in urban areas.....	13
9.4.1 General.....	13
9.4.2 Health safety evaluation.....	14
9.4.3 Environmental safety evaluation.....	14
Annex A (informative) Information of water quality criteria and guidelines for water reuse applications in some countries	15
Annex B (informative) Information of environmental safety evaluation for water reuse in extreme situations	20
Bibliography	21

Foreword

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This document was prepared by Technical Committee ISO/TC 282, *Water reuse*, Subcommittee SC 2, *Water reuse in urban areas*.

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Introduction

With economic development, climate change, increases in population and rapid urbanization, water has become a strategic resource especially in arid and semi-arid regions. Water shortages are considered as one of the most serious threats to the sustainable development of society. To address these shortages, reclaimed water resources are increasingly being used to satisfy water demands. In addition, some communities are expanding water supply by employing potable reuse. These strategies have proven useful in increasing the reliability of long-term water supplies in many water-scarce areas.

The role of water reuse is growing for urban areas in many countries including: landscape irrigation; industrial uses; municipal non-potable uses such as toilet and urinal flushing; fire-fighting and fire suppression; environmental and recreational uses (ornamental water features, water bodies' replenishment); and vehicle washing. These non-potable water reuse systems have been developed to the degree that they are considered as an effective component of urban water management and are widely used in many cities and countries.

However, there are several types of pollutants in wastewaters, including dissolved organic matter, nutrients, salts, toxic and harmful chemicals, and pathogens. Therefore, safety evaluation and public acceptance of water quality are important issues which are of high concern during water reuse in urban areas. Water reuse safety includes health safety, environmental safety and facilities safety. For different types of reclaimed water uses, exposure pathways and potential hazards are very different. The diversity of reclaimed water applications and related hazards can result in significant differences in water quality parameters for such applications.

This document provides assessment parameters and methods for safety evaluation of non-potable water reuse in urban areas. They are intended to assist water engineers, authorities, decision makers and stakeholders in determining the safety of reclaimed water for end uses.