

# Guidelines for safe recreational water environments

VOLUME 2  
SWIMMING POOLS AND  
SIMILAR ENVIRONMENTS



World Health  
Organization

# **Guidelines for safe recreational water environments**

*VOLUME 2: SWIMMING POOLS AND SIMILAR  
ENVIRONMENTS*



WORLD HEALTH ORGANIZATION  
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# List of acronyms and abbreviations

AFR	accidental faecal release
AIDS	acquired immunodeficiency syndrome
BCDMH	bromochlorodimethylhydantoin
BDCM	bromodichloromethane
cfu	colony-forming unit
CPR	cardiopulmonary resuscitation
CPSC	Consumer Product Safety Commission (USA)
DBAA	dibromoacetic acid
DBAN	dibromoacetonitrile
DBCM	dibromochloromethane
DBP	disinfection by-products
DCAA	dichloroacetic acid
DCAN	dichloroacetonitrile
DMH	dimethylhydantoin
FAO	Food and Agriculture Organization of the United Nations
GAE	granulomatous amoebic encephalitis
HAA	haloacetic acid
HIV	human immunodeficiency virus
HPC	heterotrophic plate count
HUS	haemolytic uraemic syndrome
HVAC	heating, ventilation and air conditioning
ID <sub>50</sub>	infectious dose for 50% of the population
ILSF	International Life Saving Federation
ISO	International Organization for Standardization
JECFA	Joint FAO/WHO Expert Committee on Food Additives and Contaminants
LOAEL	lowest-observed-adverse-effect level
MBAA	monobromoacetic acid
MCAA	monochloroacetic acid
NOAEL	no-observed-adverse-effect level
NOEL	no-observed-effect level
NTU	nephelometric turbidity unit
ORP	oxidation–reduction potential
PAM	primary amoebic meningoencephalitis
pfu	plaque-forming unit
QMRA	quantitative microbiological risk assessment
TCAA	trichloroacetic acid

TCAN	trichloroacetonitrile
TDI	tolerable daily intake
TDS	total dissolved solids
THM	trihalomethane
TOC	total organic carbon
UFF	ultrafine filter
UV	ultraviolet
WHO	World Health Organization

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