



UNITED ARAB EMIRATES  
MINISTRY OF CLIMATE CHANGE  
& ENVIRONMENT

# Guiding Standards for Marine Water Properties in the United Arab Emirates 2020

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## Introduction

The marine waters of the United Arab Emirates falls within the properties scope of the subtropical waters, and is home to a diverse and rich range of marine life and habitats, in addition to being its important economic, social and heritage value.

Marine waters are usually subjected to various natural and human pressures, such as climate change, pollution, coastal development, industrial, tourism and leisure activities. These pressures can affect its properties and quality. In general, any degradation in the main biological or physical and chemical processes of marine waters can have multidimensional social, economic, health and environmental impacts.

Therefore, sustainable management of marine and coastal resources and maintaining the quality of marine water in the United Arab Emirates are of particular importance. The Ministry of Climate Change and Environment (MOCCA), being the competent federal authority, gives them a lot of attention and works in cooperation and coordination with local, regional and international competent and concerned authorities, to develop legislations, control systems, action plans and capacity building in order to protect the marine and coastal environment, ensure the sustainable use of its resources and preserve the quality of marine water, through the optimal implementation of integrated coastal marine management methodologies.

## Objective

Maintaining marine water quality is one of the important objectives of the MOCCA strategic plans. This objective is associated with an important set of indicators defined in the National Agenda of the UAE Vision 2021, the UAE Centennial and the Ministry's strategic goals. At the international level, it is linked to the 14<sup>th</sup> goal of the United Nations Sustainable Development Goals, related to the conservation and sustainable use of oceans, seas and marine resources to achieve sustainable development.

The main objective of this project is to provide guiding standards for marine water properties at the national level, so that these standards represent the minimum standards that must be adopted and applied by the competent and relevant authorities in the country in order to maintain the quality of marine water and its properties, and ensure the best possible performance of its vital functions and economic, social and environmental services.

The guiding standards list includes a set of basic properties of marine water such as temperature, salinity, dissolved oxygen, acidity, turbidity, major nutrients, microbial bacteria and hydrocarbons.

These guiding standards represent one of the important tools to regularly monitor changes that may occur in the quality of marine water, and enable competent and relevant authorities to immediately respond to these changes and address them. Moreover, the guiding standards allow the identification of the factors that affect the quality of marine water, assessment of the effectiveness of legislation and measures taken to protect and preserve it, in addition to their contribution in supporting the decision-making process by following up the specified reference values.

## Legal Reference

The guiding standards for marine water quality properties are based on the Federal Law No. (24) of 1999 on the Protection and Development of the Environment, specifically to article 10 of Chapter 2, which states: “The Ministry, in coordination and consultation with the competent and concerned authorities, shall prepare, issue, review, develop and update the standards and criteria for environmental protection. In defining these standards and criteria, a balance must be struck between the available technical capabilities and the required economic cost, and without prejudice to the requirements of environmental protection and pollution control.”



## Benchmarking Methodologies and Comparison

The list of standards was defined by:

1. Studying the results of past and current readings of marine water properties and periodic field data available at the Ministry of Climate Change and Environment.
2. Conducting benchmarking comparisons at the local, regional and international level.

The following table shows the entities that benchmarking comparisons were conducted with to prepare the guiding standards:

<b>Locally</b>
The Federal Standards in Federal Law No 24 of 1999 on the Protection and Development of the Environment and the Implementing Environmental Systems (Marine Environmental Protection System - Annex No. (8): Biodegradable contaminated liquid waste that can be discharged into the marine environment)
Marine water quality standards in the Emirate of Abu Dhabi
Marine water standards - Dubai Municipality
Port water standards - Trakhees in Dubai
<b>Regionally</b>
Marine water standards - Kuwait
Marine water standards – Sultanate of Oman
<b>Internationally</b>
ASEAN Group on Marine Water Quality Standards
Marine Water Standards - Australia and New Zealand
Marine Water Quality Standards - USA and Canada

## List of Guiding Standards for Marine Water Quality

The list below shows the guiding standards for the marine water quality properties in the country, which include: the element, symbol, unit of measurement and reference values for each component:

No	Element	Symbol	Unit	Value
1	Temperature	Temperature	°C	19 - 35
2	Salinity	Salinity	ppt	<45
3	Dissolved Oxygen	Dissolved Oxygen	mg/l	>4
4	Acidity (pH)	pH	-	6.5 - 9.0
5	Turbidity	Turbidity	NTU	<75
6	Chlorophyll-a	Chlorophyll-a	µg/l	<4
7	Ammonia-N(NH <sub>3</sub> -N)	Ammonia-N(NH <sub>3</sub> -N)	µg/l	<60
8	Nitrate-N (NO <sub>3</sub> -N)	Nitrate-N (NO <sub>3</sub> -N)	µg/l	<95
9	Nitrite-N (NO <sub>2</sub> -N)	Nitrite-N (NO <sub>2</sub> -N)	µg/l	<35
10	Phosphate-P (PO <sub>4</sub> -P)	Phosphate-P (PO <sub>4</sub> -P)	µg/l	<89
11	Silicate-Si (SiO <sub>3</sub> -Si)	Silicate-Si (SiO <sub>3</sub> -Si)	µg/l	<900
12	Total Coliform	Total Coliform	MPN/100ml	<1000
13	Escherichia coli E. Coli	Escherichia coli E. Coli	MPN/100ml	<200
14	Enterococci	Enterococci	MPN/100ml	<35
15	Total Petroleum Hydrocarbons	Total Petroleum Hydrocarbons	mg/l	<5

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