

Table 3.1: Results of Physical Analysis

Parameter	Sample (1)	Sample (2)	Sample (3)	Sample (4)	Sample (5)	Sample (6)	Sample (7)
Electrical conductivity Sites mmhos x 10 ³ At (25C)	Eidbabiker 0.45x10 ³	Alshigla 0.58x10 ³	Altakamol 0.28x10 ³	Albashir 0.38x10 ³	Darelsalam 0.32x10 ³	Albarakat 0.22x10 ³	Almaigoma 0.25x10 ³
pH	8.55	8.04	7.96	8.01	8.0	7.89	7.6
Odor	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
Turbidity Appearance	Clear	Clear	Clear	Clear	Clear	Clear	Clear

Table 3.2: Results of Chemical Analysis

Nitrate (NO₃) mg/L	14	1	5	Nil	Nil	Nil	8
Fluoride (F) mg/l	0.55	0.55	0.5	0.35	0.3	0.2	0.1

Table 3.3: World Health Organization (WHO) Chemical Parameters Standards (1995)

Parameters	Acceptable Levels	Reasons for consumer complaints
Physical parameters		
Colour	15 TCU	Appearance
Taste and odour		Should be acceptable
Temperature		Should be acceptable
Turbidity	5 NTU	Appearance; for effective terminal disinfection. Medium turbidity <1 NTU, single sample < 5 NTU

Chemical Parameters		
PH	6.5 – 8.5	Low PH: corrosion, high PH: taste, soapy feel. Preferably < 8.0 for effective disinfection with chlorine.
Total dissolved solid	1000 mg/L	Taste
Total Hardness as (CaCO₃)	500 mg/L	High hardness: scale deposition, scum formation. Low hardness: possible corrosion
Chloride (Cl)	250 mg/L	Taste, corrosion
Sulphate (SO₄)	200 mg/L	Taste, corrosion
Magnesium (Mg)	125 mg/L	
Sodium (Na)	200 mg/L	Taste
Ammonia (NH₃)	1.5 mg/L	Odour and taste.
Nitrites (NO₂)	1.5 mg/L	The sum of the ratio of the concentration of each to its respective guideline value should not exceed 1.
Nitrates (NO₃)	50 mg/L	
Fluoride (F)	1.5 mg/L	Climatic conditions, volume of water consumed, and intake from other sources should be considered when setting national standards.

**Sources: World Health Organization
Guidelines for drinking water quality**