



## Water Quality of Selected Villages of Dhrangadhra Taluka (Some Physico Chemical Studies)

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**Abstract:** Physico Chemical Characteristics of water of villages of Dhrangadhra were studied. The Duration of study was August-2010 to November-2011. To understanding the water quality, sampling of water is an important tool. The Parameters studies were total alkalinity, TDS, Chloride, Sulphate PH, Zn were also found.

### I. INTRODUCTION

The investigation in ground water resources in any region is primarily concerned with its utility for irrigation. Another interesting purpose of studying Ground Water would be to consider the distribution of various salts from geo chemical view point. The quality of water is influenced by the nature of some minerals contain in water.

This water source is vital for maintaining the ground water level of this area. Also this became a very good sources of water for villages of Dhrangadhra taluka.

It is very important for quantitative study of physico - cheical characteristics of villages of Dhrangadhra taluka.

The present study involves some different aspect related to quality of water.

### II. RESEARCH METHODOLOGY

To Understanding the water quality, sampling of water is an important tool. It is extremely difficult to entire water body and it may be necessary either a small portion of water referred to as a sample, which represents the whole water body, it is collecting for detailed investigation. This is good as testing the entire water body, bi-monthly (winter, summer, monsoon) samples will collect of villages of Dhrangadhra taluka.

Turbidity and PH were measured by digital nephelo turbidity meter (type-132) and PH meter (type-332) respectively, chlorine was estimated by precipitation method using AgNO<sub>3</sub> solution. Sulphate was estimated by UV - visible spectrometers (type-11). Total Hardness was determined by volumetric titration (EDTA method)

### III. RESULTS AND DISCUSSION

VILLAGE	TOTAL HARDNESS (mg/L)	Permanent HARDNES (mg/L)	Temporary HARDNESS (mg/L)	+2 Ca HARDNESS (mg/L)	+2 Mg HARDNESS (mg/L)	PH (mg/L)	- CI (mg/L)	-2 So4 (mg/L)	zn (mg/L)
KANKAVATI	466	243	223	218	254	7.68	232	268	3.5
VAGHAGADH	407	206	201	216	260	7.72	228	266	3.4
JASMATPUR	435	223	212	223	264	7.82	254	254	4.5
SOLDI	488	250	238	228	259	7.92	235	243	3.3
NAVALGADH	473	247	226	235	261	8.12	269	256	4.1
NARICHANA	455	245	210	219	254	7.61	216	239	4.2
BAVLI	440	224	216	244	269	7.93	238	228	3.6
GAJANVAV	464	238	226	238	268	8.21	261	232	3.8
JEGADAVA	459	224	235	219	256	7.55	233	254	3.7

Results obtained during the analysis were shown in above table. WHO standards for drinking water are given below.

Sulphate : 250 mg / lit.

Zinc : 5 mg / lit.

Chloride : 250 mg / lit.



Total Hardness : 100 mg / lit.

The concentration of sulphates and chloride were found in the range 228-268 mg / litre and 216-269 mg / litre respectively. High chloride content has poisonous effect on plant and animals.

The PH value of 8.21 water was ranged between 7.55 to 8.21 indicating slightly alkaline nature of water.

Total hardness was found in the range 407 to 488 mg/litre.

#### IV. CONCLUSION

- ✓ The concentration of sulphate, total hardness, Ca and Mg were found beyond minimum tolerance limit.
- ✓ The concentration of chloride in most of the water of the villages is in the limit.

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