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Ground water Quality Report at M.V.J.Medical College, Dandupalya, Hoskote Taluk

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***Abstract*- Water and health are inter-twined in many ways and it is important to address the increasing need for adequate and safe water to protect both the people and the planet. Water is one of the earth's most precious and threatened resources and health is each one of our most precious resource. Hence we need to protect and enhance them both. In the recent years, groundwater in the study area forms the mainstay of drinking water supply for meeting the community needs. But the threat of groundwater contamination is looming large over the study area. Contamination of groundwater source could occur due to pollution from industrial, agricultural and community living. Also, geology of the region has an important bearing on certain dissolved constituents in the groundwater supply, in particular like fluorides. In view of this, it is of paramount importance to look for and to evaluate the physico-chemical and bacteriological parameters in the drinking water of the area and assess their status of potability in the light of the criteria laid by Bureau of Indian Standards (B.I.S).**

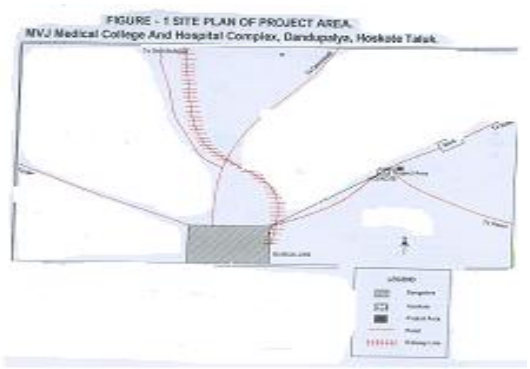
***Index Terms*- Physicochemical, biological, Parameters, BIS, Groundwater**

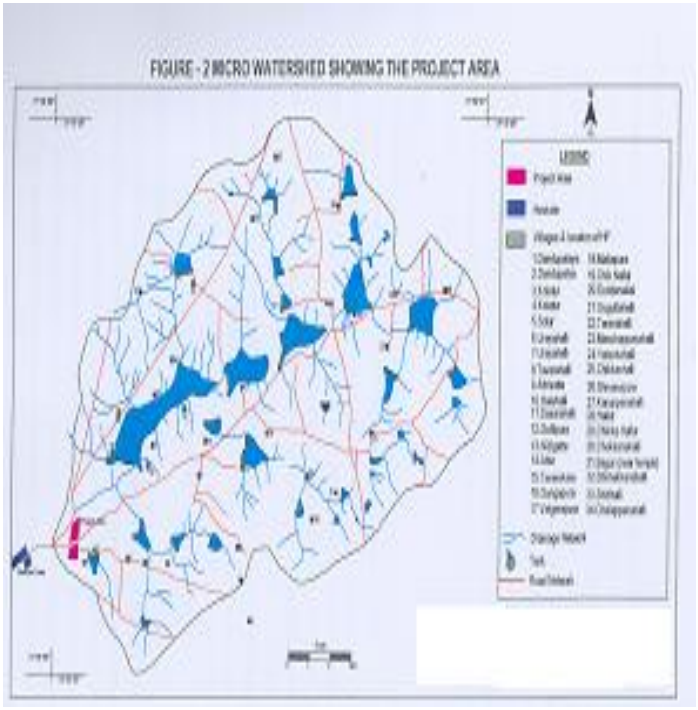
I. INTRODUCTION

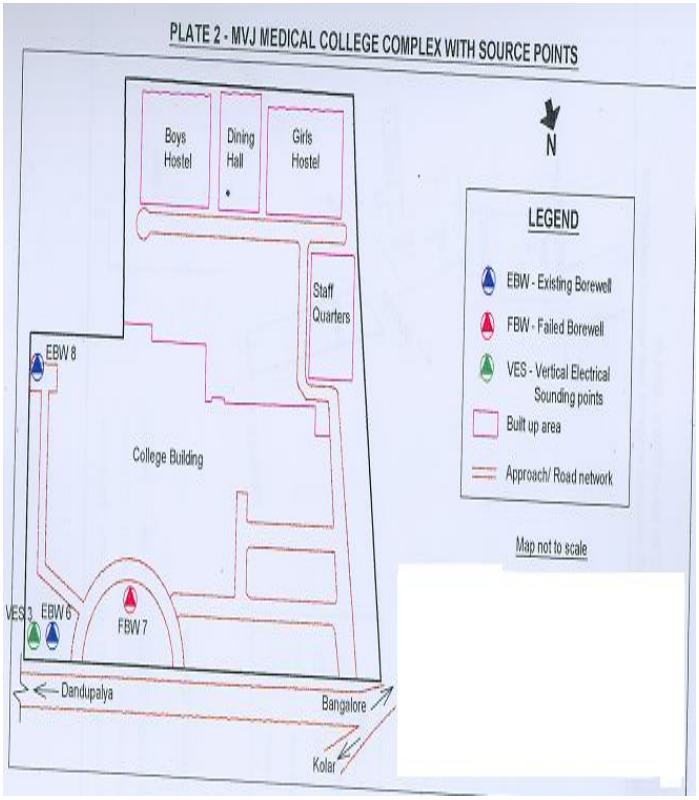
The quality of groundwater in nature is determined by quantum and nature of recharge, chemical composition of the soil cover and its thickness, mineralogical make up of the aquifer, residence time of the water which is governed by the transmissivity of the formation. The two important characteristics of the crystalline terrain, which covers practically the entire Taluk, are the heterogeneity and preferred flow paths. They have a dominant role to play in determining the quality of the ground water with the result; large variations are noticed in short distances. Thus it is not uncommon to get varied quality of water even in a small village. This fact is to be borne in mind while locating sources of water supply for various uses.

II. LOCATION

The Hospital complex and the Medical college are located in an area of about 12 hectares (30 acres) belonging to the Venkatesha Education Society and is situated about 3km from the Hoskote Town (13^0 4' 30" and 77^0 2' 30" 57 G/16) on the National High way No.4 (NH_4) and is about 200m South of the km stone 303 on the NH (Fig 1) Hoskote town is about 27km from Bangalore city the state capital. Hoskote town has a population of 34,400 (2001) and is also the Taluk headquarters falling in the toposheet No. 57G/16. The Hospital complex is located adjascent to the village Dandupalya (13^0 4' 25" and 77^0 4' 30").







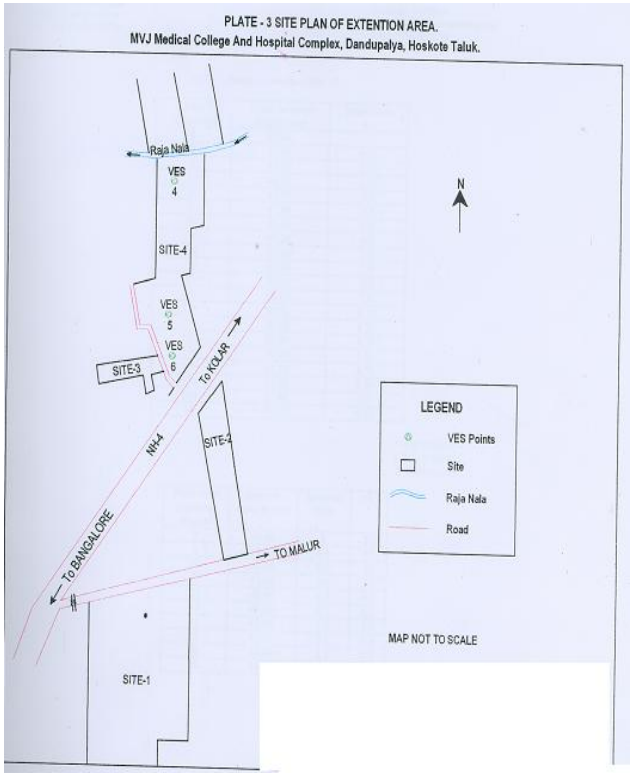


Table 1.1 Physico-chemical characteristics of Groundwater of Hoskote Taluk

COL.1	**COL.2**	**COL.3**	**COL.4**
SL. NO	**Characteristics**	**Desirable limitsmg/l**	**Permissible limits mg/l**
1	Colour (Hazen unit)	5	25
2	Turbidity (NTU)	5	10
3	P^H value	6.5 to 8.5	No relaxation
4	Total Hardness(mg/l.)	300	600
5	Iron (mg/l.)	0.3	1
6	Chlorides (mg/l.)	250	1000
7	Calcium(mg/l.)	75	200
8	Nitrates(mg/l.)	45	100
9	Sulphates (mg/l.)	200	400
10	Fluorides (mg/l.),	1	1.5
11	Alkalinity (mg/l.)	200	600
12	Total dissolved solids (mg/l)	500	2000
13	Bacteriological test for E - coli (MPN)	0/10ml	<10/100 ml
14	Conductivity(Us/cm)		
15	Temperature		

COL.1	COL.5	COL.6	
SL.NO	**Characteristics**	**Hoskote Taluk Minimum**	**Maximum**
1	Colour (Hazen unit)	1	1
2	Turbidity (NTU)	0.05 NTU	50 NTU
3	P^H value	6.3	7.8
4	Total Hardness (mg/l.)	40	2550
5	Iron (mg/l.)	0	32
6	Chlorides (mg/l.)	12	1635
7	Calcium(mg/l.)	16	1308
8	Nitrates(mg/l.)	0	25
9	Sulphates (mg/l.)	1.6	232
10	Fluorides (mg/l.),	0	3.6
11	Alkalinity (mg/l.)	32	770
12	Total dissolved solids (mg/l)	70	4130
13	Bacteriological test for E - coli (MPN)	0	1333
14	Conductivity (Us/cm)	87	5670
15	Temperature	20^0C in the month of November	31^0C in the month of May

Table 1.2 WATER QUALITY RESULT AT M.V.J.MEDICAL COLLEGE, DANDUPALYA

Water quality result at MVJ Medical College

COL.1	COL.2	COL.3	COL.4
SL.NO	Characteristics	Desirable limitsmg/l	Permissible limits mg/l
1	Colour (Hazen unit)	5	25
2	Turbidity (NTU)	5	10
3	P^H value	6.5 to 8.5	No relaxation
4	Total Hardness (mg/l.)	300	600
5	Iron (mg/l.)	0.3	1
6	Chlorides (mg/l.)	250	1000
7	Calcium(mg/l.)	75	200
8	Nitrates(mg/l.)	45	100
9	Sulphates (mg/l.)	200	400
10	Fluorides (mg/l.),	1	1.5
11	Alkalinity (mg/l.)	200	600
12	Total dissolved solids (mg/l)	500	2000
13	Bacteriological test for E - coli (MPN)	0/10ml	<10/100 ml
14	Conductivity (Us/cm)		
15	Temperature		

COL.1	COL.5	COL.6	COL.7	COL.8	COL.9
SL.NO	BW-1	BW-2	BW-4	BW-6	BW-7
1	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00
3	7.16	7.35	8.05	7.76	7.90
4	576.0	332.0	320.0	296.0	540.0
5	0.08	0.08	0.08	0.08	0.08
6	283.60	70.90	70.90	55.45	304.87
7	159.51	97.79	81.76	83.32	145.08
8	3.83	84.25	101.04	83.41	46.41
9	52.47	51.50	50.26	39.92	54.03
10	0.50	0.50	0.51	0.48	0.28
11	350.0	260.0	250.0	260.0	230.6
12	1040.0	613.0	580.0	389.0	1014.0
13	------	------	------	----	----
14					
15	20^0C in the month of November 31^0C in the month of May				

III. DISCUSSION

Since the groundwater going to utilized for drinking, domestic and other purposes needed in the hospital complex, analyzed the water samples collected from the existing bore wells in the hospital and college campus. The results of the chemical analysis are given in the Table 1.2

From the examination of the analysis of the parameters are within the permissible limits except

in case of BW1, Which has the TDS of more than 1000 mg/l and Nitrate more than 100 mg/l in case of BW4. The Fluoride is within 0.50 mg/l in all the cases the total hardness is higher than the permissible limit. The college authorities are installed a water treatment plant they are treated the water they will be supplied after meeting the necessary standards of BIS 1991.

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BIOGRAPHIES

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Author's Photo

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