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CONCENTRATION OF FLUORIDES IN SOME GROUND WATER SAMPLES OF SELU CITY DIST. PARBHANI

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Abstract

Determination of fluorides concentration of Fifteen ground water samples from different sites in Selu city of Parbhani district was carried out using ion selective electrode. The out come of the results were discussed in the light of pollution status of the study area.

Key words: Fluoride ion concentration, ground water Selu city

Introduction:

Selu is considered to be the oldest and religious city in Parbhani district of Marathwada region In Maharashtra, Sailu city situated near Dudhana river. A famous Temple of "Keshavraj Babasaheb Maharaj" is situated in the middle of Selu city, who was Guru of Shirdi's Sai baba. The residents of Sailu city usually use water from bore-well for drinking and domestic purposes.There is a huge variation in the concentration of different species due to factors like depth, different land, under groundwater conditions, rain conditions etc. The present work attempts to evaluate the quality of ground water in Selu city of Parbhani district for potability.

Material- material used:

In the present study Fifteen groundwater [bore-well] samples were collected from different Sites of Sailu city in brown glass bottles with necessary precautions and preserved as per the recommended procedures[1] . All the chemicals used were of AR grade, glass ware used were of 'A' grade. Double distilled Water was used through out the work to prepare standard solution[2] .

Method:

Fluoride concentration in aqueous samples was determined with Fluoride-Ion Electrode [IRON] and ORION 407 A Ion meter. 25 ml of Aliquot was taken in polythene beaker and 25 ml of [TISAB-III] Total Ionic Strength, Adjuster Buffer, ORION Application Solution was added. Ion meter was standardized against solution of known Fluoride concentration in the standard sample and read directly on the meter scale. The scale was calibrated in ppm of fluoride concentration in water.

Result & Discussion:

Fluoride has little significance in industrial waters, but in amount of 1 to 1.5 ppm it is an effective preventive of Dental curies. Above this amount, fluoride may causes dental fluorosis and skeletal fluorosis concentration to the acceptable levels.

In the present work fluoride concentration varied from 0.15 to 0.32 ppm. The values obtained are well below permissible limit, 1ppm, prescribed by ICMR[3] .

HEAVY METALS CONCENTRATION IN SOME GROUNDWATER SAMPLES OF SELU CITY,DIST PARBHANI

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Abstract

Determination of heavy metal concentration of selected Fifteen sites from Selu City of Parbhani district was carried out. Heavy metals were estimated by Atomic Absorption spectrophotometer, and out come of the results were discussed in the light of pollution status of the study area.

Keywords -Heavy Metals Groundwater; Selu

Introduction

Sailu is considered to be the oldest and religious city in parbhani district of Marathwada region in Maharashtra, Sailu city is situated near Dudhana river. A Femous Temple of "Keshavraj Babasaheb Maharaj" is situated in middle of selu. Who was Guru of Shirdis Sai baba. The residents of Sailu tehsil usually use water form bore-well for drinking and domestic purposes.There is a huge variation in the concentration of dirrrent species due to factors like depth, diffrent land, under groundwater conditions, rain conditions etc. The present work attempts to evaluate the quality of groundwater in selu of Parbhani district for potability.

Material Used

In the Present study Fifteen groundwater (borewell) samples were collected from diffrent sites of Selu tehsil in brown glass bottles with necessary precautions and preserved as per the recommended procedures.[1] All the Chemicals used were of AR grade, Glass ware used were of 'A' grade. Double distilled water was used through out the work to prepare standard solution.[2]

Methods

Exactly 500 ml of each water sample was taken in clean, dry separating funnel. Exactly 25 ml of Isobutylmethylketone (IBMK) and 2 ml of Ammoniumpyrolidinedithiocarbomate (APDC3) were added. The soluction was shaken well, for 20 minutes and allowed for separation of organic and aqueous layer. Aqueous layer was discarded out. To the organic layer, 1ml of 50% HNO_3 was addded and allowed to settle and further the aqueous layer was collected and preserved for analysis of trace metals. Theaqueous extract was made up to 25 ml, using D.D. water and analysed for heavy metal by using Atomic Absorption Spectrophotometer[1]

Table 1: Heavy metals in ground water samples of Selu

Sample	Cd	Cr	Pb	As	Cu	Zn	Hg
DT1	15	10	35	12	85	40	00
DT2	18	14	38	11	63	36	00
DT3	28	16	36	14	40	86	01
DT4	26	12	28	17	25	75	00
DT5	22	13	32	18	36	60	00
DT6	27	18	31	16	38	55	01
DT7	25	16	34	13	48	54	00
DT8	17	11	28	14	57	44	01