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Heavy Metals In Groundwater Samples Of Sailu City, District Parbhani

D.U.Thombal,
L.B.S. College, Partur, Dist.Jalna

Abstract

Determination of heavy metal concentration of selected Fifteen sites from Sailu 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 Metal Ground Water; Sailu city

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 Famous Temple of "Keshavraj Babasaheb Maharaj" is situated in middle of sailu city. 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 dirrent 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 sailu City of Parbhani district for potability.

Materials

Material Used

In the Present study Fifteen groundwater (borewell) samples were collected from diffrent sites of Sailu 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 Ammoniumpyrolidinedithiocarbamate (APDC3) were added. The solution 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% HNO₃ was added 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 Spectrophotometer¹

Table 1: Heavy metals in ground water samples of Sailu City

Sample	Cd	Cr	Pb	As	Cu	Zn	Hg
T1	12	08	30	12	100	48	00
T2	18	18	40	08	84	20	00
T3	20	16	18	12	30	30	01
T4	22	12	60	14	15	25	00
T5	24	14	20	16	40	110	00
T6	18	10	10	18	20	24	00
T7	14	12	20	14	70	30	00
T8	16	12	24	11	60	80	01
T9	20	14	18	13	65	60	00
T10	24	08	16	16	75	90	00
T11	22	10	14	14	30	70	01
T12	14	12	20	16	20	40	00
T13	18	14	18	18	40	30	01
T14	28	16	08	10	38	20	00
T15	30	20	10	14	60	46	01

Results and Discussion

Heavy metals are the major category of toxic pollutants, distrubuted in water bodies, which have been extracted from earths curst. The results obtained during the present investigation are tabulated in Table 1.