

## **ARSENIC CONTAMINATION IN GROUND WATER OF BALLIA, UTTAR PRADESH STATE, INDIA**

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### **Abstract**

In the present study arsenic distribution is seen in ground water of Ballia region of north India. Thirty ground water samples were collected from shallow bore well hand pumps (29-34 m depth) from Baria, Maniar, Dubahar and Sikanderpur villages of Ballia district. In addition to this, eight ground water samples were collected from the deep bore well hand pumps (60-70 m depth) to study the difference in arsenic geochemistry from shallow bore well hand pumps. Arsenic varies from 0 to 370 mg/l in shallow while 0 to 13 mg/l in deeper ground water samples. A positive correlation of arsenic exists with iron and phosphate while it maintains a negative relation with sulfate. Presence of iron in reducing state (negative ORP) favors the mobility of arsenic. Low concentration of sulfate is attributed to its conversion through bacterial activity which precipitates arsenic in ground water.

*Key words:* Ground water; Arsenic; Ballia; India.