

عنوان مقاله:

Natural Arsenic Pollution and Hydrochemistry of Drinking Water of an Urban Part of Iran

محل انتشار:

مهندسی بهداشت محیط, دوره 1, شماره 1 (سال: 1393)

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خلاصه مقاله:

Natural contamination of surface and groundwater resources with arsenic is a worldwide problem. The present study aimed to investigate and report on the quality of drinking water resources with special focus on arsenic presence in an urban part of Iran. Arsenic concentrations were measured by graphite furnace atomic absorption spectroscopy (GFAAS). In both surface and groundwater samples, arsenic concentrations ranged from 6 - 61 $\mu\text{g/L}$ with an average value of $39 \pm 20 \mu\text{g/L}$. Concentration of arsenic, which was up to six times greater than guideline values (10 $\mu\text{g/L}$) indicates the presence of arsenic bearing materials in the geological structure of the region. It was found that the quality of treated surface water produced by the water treatment facility was good in respect to arsenic (9 $\mu\text{g/L}$) and solid content (EC = $\mu\text{s/cm}$). However, in drinking water samples of wells, total solids (mean EC = $1580 \pm 150 \mu\text{s/cm}$), total hardness (mean = $479 + 94 \text{ mg/L}$ as CaCO_3) and arsenic (mean = $42 + 16 \mu\text{g/L}$) were significantly higher. Correspondingly, there was a significant correlation between arsenic concentration and EC, Na^+ , K^+ and Cl^- values. The type of water in most of groundwater samples (70%) was determined as $\text{HCO}_3^- - \text{Na}^+$. Considering the population of the city and probable health effects due to exposure to arsenic through drinking water, comprehensive measures as well as application of arsenic removal processes in water treatment facilities and replacement of contaminated wells with safe wells are required.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1912168>

