

عنوان مقاله:

Grain-Size Analysis and Contamination Assessment of Heavy Metals in Sediments from Ghezel Ozan River in Zanjan (Province, Iran (August ۲۰۱۹ to September ۲۰۲۰

محل انتشار:

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نویسندگان:

مینا اسلامی - *Department of Chemistry, Faculty of Science, University of Zanjan, Zanjan, Iran*

محمد آبادی - *Department of Environmental Science, Faculty of Science, University of Zanjan, Zanjan, Iran*

عباسعلی زمانی - *Department of Environmental Science, Faculty of Science, University of Zanjan, Zanjan, Iran*

جابر اعظمی - *Department of Environmental Science, Faculty of Science, University of Zanjan, Zanjan, Iran*

حمید بدیعی - *Department of Environmental Science, Faculty of Science, Guilan University-University Campus, Rasht, Iran*

خلاصه مقاله:

Background: The present study aims to assess the amounts of Zn, Cu, Cd, Pb, Ni, Co, Mn, and Fe by analyzing the particle composition of the surficial sediments in Ghezel Ozan River located in Zanjan, Iran. Methods: ۱۸ sediment samples were collected from Ghezel Ozan River. After Aqua Regia Digestion, the studied heavy metals in sediment samples were determined by flame atomic absorption spectrophotometry. Several pollution indices, such as Enrichment Factor (EF), Geo-accumulation Index (Igeo), Pollution Factor (Cd), and Pollution Load Index (PLI), were calculated. Results: Observed average values (in unit mg kg⁻¹) were in the range of Zn: ۴۸۰.۰-۳۴۲۹۴.۰, Cu: ۷.۸-۳۲.۰۰, Cd: not detected -۱۰۰.۰, Pb: ۲۲.۰-۲۵۶.۰, Ni: ۲.۵۰-۶۰.۰۰, Co: ۷.۶۰-۳۴.۰, Mn: ۱۴۴.۰-۳۱۶۰۰.۰ and Fe: ۹۳۲۰.۰-۶۲۳۰۰.۰. The Igeo index confirmed that the average values of Zn, Pb, and Cd are in the heavily contaminated levels. The mean EF index suggested minimal enrichment for Cu, Ni, Mn, and Co, whereas Zn, Cd, and Pb indicated severe enrichment. Conclusion: The average Cd, RI, and PLI indices for all investigated heavy metals confirmed a considerable contamination level.

کلمات کلیدی:

,Enrichment Factor, Geo-accumulation Index, Pollution Factor, Pollution Load Index, Geospatial Distribution Patterns
شاخص غنی سازی؛ شاخص زمین انباشتگی؛ عامل آلودگی؛ شاخص بار آلودگی؛ الگوهای توزیع جغرافیایی

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