

## عنوان مقاله:

(Assessment of scale formation and corrosion of drinking water supplies in Ilam city (Iran

## محل انتشار:

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## خلاصه مقاله:

Background: Scaling and corrosion are the two most important indexes in water quality evaluation. Pollutants are released in water due to corrosion of pipelines. The aim of this study is to assess the scale formation and corrosion of drinking water supplies in Ilam city (Iran). Methods: This research is a descriptive and cross-sectional study which is based on the 20 drinking water sources in Ilam city. Experiments were carried out in accordance with the Water and Wastewater Co. standard methods for water and wastewater experiment. The data were analyzed by using Microsoft Excel and GraphPad Prism 5. The results were compared with national and international standards. Results: The mean and standard deviation (SD) values of Ryznar, Langelier, Aggressive, Puckorius and Larson-Skold indices in year 2009 were equal to 7.833 ( $\pm 0.28$ ), -0.102 ( $\pm 0.35$ ), 11.88 ( $\pm 0.34$ ), 7.481 ( $\pm 0.22$ ) and 0.801 ( $\pm 0.44$ ), respectively, and were 7.861 ( $\pm 0.28$ ), -0.175 ( $\pm 0.34$ ), 11.84 ( $\pm 0.37$ ), 7.298 ( $\pm 0.32$ ) and 0.633 ( $\pm 0.47$ ), for year 2013 respectively. The average of Langelier, Ryznar, Aggression, and Puckorius indices indicate that potable water resources in Ilam city have the tendency to be corrosive. Statistical analysis and figures carried out by GraphPad Prism version 5.04. Conclusion: The results of different indices for water resources of Ilam city revealed that water supplies of Ilam city were corrosive. Water quality control and replacement of distribution pipes in development of water network should be carried out. Moreover, water pipelines should be preserved with several modes of corrosion inhibition.

## کلمات کلیدی:

Corrosion, Scale formation, Water resources, Ilam

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