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Author: Mohammad Ali Ahmadi Mahdi zeinali Hasanvand
Sara Shokrollahzadeh Behbahani Mojtaba Amiri Goodarz
Ahmadi



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Effect of Operational Parameters on the Performance of Carbonated Water Injection: Experimental and Numerical Modeling Study

Mohammad Ali Ahmadi^{1,2}, Mahdi zeinali Hasanvand³, Sara Shokrollahzadeh Behbahani⁴,
Mojtaba Amiri⁵, Goodarz Ahmadi⁶

¹⁾ Department of Petroleum Engineering, Ahwaz Faculty of Petroleum Engineering, Petroleum University of Technology (PUT), Ahwaz, Iran

²⁾ IOR/EOR Research Institute, Tehran, Iran

³⁾ Research Institute of Petroleum Industry (RIPI), Tehran, Iran

⁴⁾ Department of Petroleum Engineering, Amirkabir University of Technology, Tehran, Iran

⁵⁾ Department of Petroleum Engineering, Islamic Azad University, Science and Research Branch, Tehran, Iran

⁶⁾ Department of Mechanical and Aeronautical Engineering, Clarkson University, United States

^{*}) Corresponding Authors: (M.A. Ahmadi) IOR/EOR Research Institute, Tehran, Iran,
TEL: +989126364936, Email: ahmadi6776@yahoo.com

Abstract

The most attractive features of carbonated water injection (CWI) are its application for enhanced oil recovery (EOR) and potential for reducing greenhouse gas emissions. CWI is a robust CO₂ sequestration method in which carbonated water is injected into depleted oil reservoirs. CWI could also be coupled with disposal water injection. However, CWI efficiency in CO₂ sequestration and enhanced oil recovery depends on operational parameters such as CO₂ concentration in the injected fluid and injection flow rate. Therefore, the aim of this research is the investigation of addressed parameters in laboratory and field scales.

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