



165 | 5 | 0  
Views | CrossRef citations to date | Altmetric

Original Articles

# A Comparative Study on Carbon Dioxide Miscible Injection Modes

F. M. Nasir & B. M. R. Demiral

Pages 1559-1568 | Received 16 Mar 2010, Accepted 18 Apr 2010, Published online: 09 Jul 2012

“ Cite this article    <https://doi.org/10.1080/15567036.2010.487279>

Sample our  
Economics, Finance,  
Business & Industry Journals  
>> **Sign in here** to start your access  
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

## Abstract

This article presents an experimental study of comparing different carbon dioxide (CO<sub>2</sub>) injection mode for a reservoir in Malaysia (Alpha X Reservoir). The main objective is to determine the most technically optimum miscible CO<sub>2</sub> injection mode or strategy for this field. Using coreflood equipment, miscible CO<sub>2</sub> displacements were conducted on four berea core plugs that have been saturated with crude oil from the reservoir. Almost 2 PV of water and/or gas were injected into the cores with different modes. The experiments were conducted at the minimum miscibility pressure of the crude oil to ensure that CO<sub>2</sub> is fully miscible with the oil. The results indicate that the simultaneous gas injection yields the highest incremental oil recovery, about 28% oil originally in place. Based on the calculation of utilization factor and tertiary recovery factor for each injection mode, it was confirmed that simultaneous gas injection is the best injection



mode for Alpha X reservoir. It gives the highest recovery per unit of CO<sub>2</sub> injected and utilizes relatively the least volume of CO<sub>2</sub> to produce a unit of oil.

Keywords:

- carbon dioxide
- core flooding
- enhanced oil recovery
- miscible



Related research ⓘ

- People also read
- Recommended articles
- Cited by 5



## Information for

Authors

R&D professionals

Editors

Librarians

Societies

## Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

## Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

## Help and information

Help and contact

Newsroom

All journals

Books

## Keep up to date

Register to receive personalised research and resources by email

 Sign me up

