

Accepted Manuscript

Diagenetic history and reservoir properties of the Cenomanian-Turonian carbonates in southwestern Iran and the Persian Gulf

E. Hajikazemi, I.S. Al-Aasm, M. Coniglio



PII: S0264-8172(17)30242-8

DOI: [10.1016/j.marpetgeo.2017.06.035](https://doi.org/10.1016/j.marpetgeo.2017.06.035)

Reference: JMPG 2969

To appear in: *Marine and Petroleum Geology*

Received Date: 29 March 2016

Revised Date: 19 December 2016

Accepted Date: 21 June 2017

Please cite this article as: Hajikazemi, E., Al-Aasm, I.S., Coniglio, M., Diagenetic history and reservoir properties of the Cenomanian-Turonian carbonates in southwestern Iran and the Persian Gulf, *Marine and Petroleum Geology* (2017), doi: 10.1016/j.marpetgeo.2017.06.035.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

DIAGENETIC HISTORY AND RESERVOIR PROPERTIES OF THE CENOMANIAN-TURONIAN CARBONATES IN SOUTHWESTERN IRAN AND THE PERSIAN GULF

E. Hajikazemi^{1*}, I.S. Al-Aasm², M. Coniglio³

1. Iranian Offshore Oil Company, Tehran, Iran.

2. Department of Earth and Environmental Sciences, University of Windsor, Windsor, Ontario, N9B 3P4 Canada.

3. Department of Earth and Environmental Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

*author for correspondence, e-mail: ekazemi@iooc.co.ir

ABSTRACT

Shallow-marine carbonates of the mid-Cretaceous Sarvak Formation are important reservoir rocks in southern Iran and the Persian Gulf region. These carbonates were deposited on the margin of the Arabian Plate and rest on the Kazhdumi Formation, which is one of the major hydrocarbon source rocks in the region. The top of the Sarvak Formation coincides with the regional Turonian unconformity. Most of the observed diagenetic features are genetically related to meteoric waters entering the Sarvak Formation during Cenomanian-Turonian and mid-Turonian uplift and the subsequent paleoexposure.

Integration of field and petrographic studies and isotope geochemistry reveals the history of a variety of diagenetic processes, which include dissolution and development of secondary porosity which enhance reservoir properties of the Upper Sarvak carbonates. Various types of calcite cements were identified as the main cause for porosity loss in these carbonates. Their diagenetic environment is discussed using the geochemical data acquired as part of the present study.

The $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ values (-12.3 to -0.6 ‰ and -5.8 to 3.6‰ VPDB, respectively) of the cements indicate precipitation from marine, meteoric and/or mixed meteoric-marine fluids. Some drusy calcite cements exhibit $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ values (-5.1 and 0.8

Download English Version:

<https://daneshyari.com/en/article/8909341>

Download Persian Version:

<https://daneshyari.com/article/8909341>

[Daneshyari.com](https://daneshyari.com)