

## Accepted Manuscript

Hydrothermal processes in the Edmond deposits, slow- to intermediate-spreading Central Indian Ridge

Hong Cao, Zhilei Sun, Shikui Zhai, Zhimin Cao, Wei Huang, Libo Wang, Yongjun He

PII: S0924-7963(16)30380-3  
DOI: doi: [10.1016/j.jmarsys.2016.11.016](https://doi.org/10.1016/j.jmarsys.2016.11.016)  
Reference: MARSYS 2913

To appear in: *Journal of Marine Systems*

Received date: 26 April 2016  
Revised date: 4 October 2016  
Accepted date: 12 November 2016



Please cite this article as: Cao, Hong, Sun, Zhilei, Zhai, Shikui, Cao, Zhimin, Huang, Wei, Wang, Libo, He, Yongjun, Hydrothermal processes in the Edmond deposits, slow- to intermediate-spreading Central Indian Ridge, *Journal of Marine Systems* (2016), doi: [10.1016/j.jmarsys.2016.11.016](https://doi.org/10.1016/j.jmarsys.2016.11.016)

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.

# Hydrothermal processes in the Edmond deposits, slow- to intermediate-spreading Central Indian Ridge

Hong Cao<sup>a,b,c</sup>, Zhilei Sun<sup>a,b\*</sup>, Shikui Zhai<sup>b,c</sup>, Zhimin Cao<sup>b,c</sup>, Wei Huang<sup>a,b</sup>,

Libo Wang<sup>a,b</sup>, Yongjun He<sup>a</sup>

<sup>a</sup>Key Laboratory of Marine Hydrocarbon Resources and Environment Geology MLR, Qingdao Institute of Marine Geology, Qingdao, China

<sup>b</sup>Laboratory for Marine Mineral Resources, Qingdao National Laboratory for Marine Science and Technology, Qingdao, China

<sup>c</sup>China Key Laboratory of Submarine Geosciences and Technology, Ministry of Education, Department of Marine Geoscience, Ocean University of China, Qingdao, China

\*Corresponding author: Zhilei Sun, zhileisun@yeah.net, Tel.: +86 (532) 85723759, Fax: +86 (532) 85720553.

## ABSTRACT

The Edmond hydrothermal field, located on the Central Indian Ridge (CIR), has a distinct mineralization history owing to its unique magmatic, tectonic, and alteration processes. Here, we report the detailed mineralogical and geochemical characteristics of hydrothermal metal sulfides recovered from this area. Based on the mineralogical investigations, the Edmond hydrothermal deposits comprise of high-temperature Fe-rich massive sulfides, medium-temperature Zn-rich sulfide chimney and low-temperature Ca-rich sulfate mineral assemblages. According to these compositions, three distinctive mineralization stages have been identified: (1) low-temperature consisting largely of anhydrite and pyrite/marcasite; (2) medium-high temperature distinguished by the mineral assemblage of pyrite, sphalerite and chalcopyrite; and (3) low-temperature stage characterized by the mineral assemblage of colloidal pyrite/marcasite, barite, quartz, anglesite. Several lines of evidence suggest that the sulfides were influenced by pervasive low-temperature diffuse flows in this area. The hydrothermal deposits are relatively

Download English Version:

<https://daneshyari.com/en/article/8885978>

Download Persian Version:

<https://daneshyari.com/article/8885978>

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