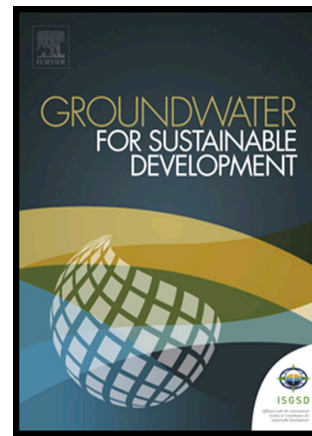


Author's Accepted Manuscript

Impact of acid mine drainage and hydrogeochemical studies in a part of Rajrappa Coal Mining Area of Ramgarh District, Jharkhand State of India

Atulya Kumar Mohanty, M. Lingaswamy, VVS Gurunadha Rao, S. Sankaran



www.elsevier.com/locate/gsd

PII: S2352-801X(17)30020-6
DOI: <https://doi.org/10.1016/j.gsd.2018.05.005>
Reference: GSD129

To appear in: *Groundwater for Sustainable Development*

Received date: 17 February 2017
Revised date: 16 May 2018
Accepted date: 18 May 2018

Cite this article as: Atulya Kumar Mohanty, M. Lingaswamy, VVS Gurunadha Rao and S. Sankaran, Impact of acid mine drainage and hydrogeochemical studies in a part of Rajrappa Coal Mining Area of Ramgarh District, Jharkhand State of India, *Groundwater for Sustainable Development*, <https://doi.org/10.1016/j.gsd.2018.05.005>

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 galley proof before it is published in its final citable 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.

Impact of acid mine drainage and hydrogeochemical studies in a part of Rajrappa Coal Mining Area of Ramgarh District, Jharkhand State of India

Atulya Kumar Mohanty*, M. Lingaswamy, VVS Gurunadha Rao and S. Sankaran

Hydrogeochemistry Division
CSIR- National Geophysical Research Institute
Uppal Road, Hyderabad, 500 007, India

Corresponding author. *E-mail: atulyakmohanty@gmail.com, akmohanty@ngri.res.in
Phone: +91 40 2701 2634, Fax: +91 40 2717 1564

Abstract

Groundwater quality studies of coal mining areas are very important due to coal explorations, dumping of huge quantity of over burdens, and subsequently mixing with the coal mine drainage areas. The main objective of this study was to evaluate the possible influence of acid mine drainage (AMD), in the groundwater in terms of major ions, trace elements and identifying the hydrogeochemical characteristics, in the Rajrappa coal mining area in the central part of India. The results show that groundwater is generally neutral to alkaline in nature. The major ions and trace elements concentrations in the groundwater samples were found to be below the permissible limits based on WHO guidelines and suitable for the drinking water purposes. Few wells show a higher order in certain parameters due to impact local geologic strata. The piper diagram shows two major hydrochemical water types represents, such as Ca-Mg-Cl, and Ca-Mg-HCO₃ types. Based on major ion concentrations and its minor variations are indicative of the stable geochemical and hydrologic environments, which controls the groundwater chemistry in the coal mining area. Geochemical evolution of the groundwater chemistry mainly controls by

Download English Version:

<https://daneshyari.com/en/article/8870505>

Download Persian Version:

<https://daneshyari.com/article/8870505>

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