



Source details

Feedback > Compare sources >

AAPG Bulletin

Scopus coverage years: from 1968 to 2021

Publisher: American Association of Petroleum Geologists

ISSN: 0149-1423

Subject area: [Earth and Planetary Sciences: Geology](#) [Earth and Planetary Sciences: Earth and Planetary Sciences \(miscellaneous\)](#)[Energy: Energy Engineering and Power Technology](#) [Earth and Planetary Sciences: Geochemistry and Petrology](#) [Energy: Fuel Technology](#)

Source type: Journal

[View all documents >](#)[Set document alert](#)[Save to source list](#)[Source Homepage](#)

CiteScore 2020

6.3



SJR 2020

1.232



SNIP 2020

1.663

[CiteScore](#) [CiteScore rank & trend](#) [Scopus content coverage](#)[Vishally 2019\(1\).pdf](#)[Shehnaz madam 2...pdf](#)[Meenakshi Mada...pdf](#)[Show all](#)

Source potential and reservoir characterization of the Cambay Shale, Cambay Basin, India: Implications for tight gas and tight oil resource development

Mateen Hafiz,¹ Naveen Hakhoo,² Ghulam M. Bhat,³ Sudeep Kanungo,⁴ Bindra Thusu,⁵ Jonathan Craig,⁶ and Waqar Ahmed⁷¹Government Maulana Azad Memorial College, Jammu and Kashmir, India; Institute of Energy Research and Training (IERT), University of Jammu, Jammu and Kashmir, India; mtn.hfz@gmail.com²IERT, University of Jammu, Jammu and Kashmir, India; Postgraduate Department of Geology, University of Jammu, Jammu and Kashmir, India; naveen@jugaa.com³IERT, University of Jammu, Jammu and Kashmir, India; Postgraduate Department of Geology, University of Jammu, Jammu and Kashmir, India; bhatgm@jugaa.com⁴Energy & Geoscience Institute (EGI), University of Utah, Salt Lake City, Utah; Department of Geology and Geophysics, University of Utah, Salt Lake City, Utah; skanungo@egi.utah.edu⁵IERT, University of Jammu, Jammu and Kashmir, India; Maghreb Petroleum Research Group, Earth Sciences Department, University College London, United Kingdom; b.thusu@ucl.ac.uk⁶Eni Upstream and Technical Services, Milan, Italy; jonathan.craig@eni.com⁷Government Maulana Azad Memorial College, Jammu and Kashmir, India; IERT, University of Jammu, Jammu and Kashmir, India; waqar@jugaa.com

ABSTRACT

New organic–geochemical investigations of the Eocene Cambay Shale (Cambay Basin, India) from five wells and an open-cast lignite mine reveal that the total organic carbon ranges from 0.37 to 10.68 wt. %, with an average of 2.43 wt. %. The pseudo–Van Krevelen diagram, hydrogen index versus the maximum pyrolysis yield temperature (T_{max}) crossplot, and the visual kerogen assessment of the Cambay Shale indicate the dominance of type III kerogen, with some well samples showing mixed type III and II kerogen. The vitrinite reflectance values range between 0.46% and 0.7%, with T_{max} values ranging from 387°C to 441°C and are consistent with an immature to early oil generation stage. The dominance of vitrinite macerals and high pristane–phytane (Pr/Ph) ratios (≥ 6) of the well samples indicate an oxic to dysoxic depositional environment, whereas the presence of *Botryococcus braunii* and low Pr/Ph ratios (< 1) in the lignite mine samples suggesting a more reducing brackish water environment. The estimation of hydrocarbons generation, expulsion, and retention data suggest a low retention of 10%–12% of generated hydrocarbons within the Cambay Shale. The mineralogical data show an abundance of clay minerals (average 62.9%), implying poor to moderate mineral brittleness index. The kerogen type and maturity level along with the high clay content and poor to moderate brittleness indicate low fracability, thereby restricting the production potential of the Cambay Shale for tight gas or tight oil exploration.