

Geological Studies on the COST No. B-2 Well, U.S. Mid-Atlantic Outer Continental Shelf Area

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Volume 4, Number 4, November 1977

URI: https://id.erudit.org/iderudit/geocan4_4br06

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Publisher(s)

The Geological Association of Canada

ISSN

0315-0941 (print)

1911-4850 (digital)

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Cite this review

Bell, J. S. (1977). Review of [Geological Studies on the COST No. B-2 Well, U.S. Mid-Atlantic Outer Continental Shelf Area]. *Geoscience Canada*, 4(4), 209–209.

examining. Behind all the industry jargon and pay thickness maps, there are concise descriptions of well-documented, three-dimensional, configurations of sedimentary rock bodies which can be used both as classroom illustrations and to illuminate situations where there is less information.

MS received August 24, 1977.

Geological Studies on the COST No. B-2 Well, U.S. Mid-Atlantic Outer Continental Shelf Area

Edited by P. A. Scholle
*United States Geological Survey
Circular 750, 71p., 1976.*

Free on application to Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202, U.S.A.

Reviewed by J. S. Bell
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Calgary, Alberta T2P 1C9*

This excellent summary report provided up-to-date information on the stratigraphy of the Baltimore Canyon Basin on the United States Atlantic continental shelf. It is also a fine example of a frontier wildcat well evaluation report, and it gives readers a good appreciation of many of the approaches and analytical techniques currently used by the oil industry.

The COST No. B-2 well was a stratigraphic test, drilled in a syncline, and deliberately intended to avoid hydrocarbon accumulations. It was drilled by the Continental Offshore Stratigraphic Test (COST) Group acting on behalf of thirty one petroleum companies who shared the expenses. COST No. B-2 is located adjacent the Baltimore Canyon exploration permits offered for leasing by the U.S. Federal Government on August 17, 1976. It was drilled to provide information on the area prior to the sale. This report is a preliminary summary of the well results.

COST No. B-2 bottomed 15,655 feet below the seafloor in Lower Cretaceous sediments and was located down-dip of a

major igneous intrusion-cored uplift that has become popularly known as the 'Great Stone Dome'. Various authors discuss the lithologies encountered, sandstone porosity and petrography, foraminiferal, nannofossil and palynomorph age dating, geothermal gradients, organic geochemistry and geophysics. The geochemical studies are of particular interest. They were aimed at establishing organic richness, hydrocarbon source rock type and degree of organic maturation. There is a good discussion of the types of measurements and analyses used to evaluate how much low grade metamorphism and organic diagenesis the rocks had undergone and whether they were capable of expelling hydrocarbons. A brief chapter on geophysics alludes to seismic stratigraphy as well as outlining of a shallow amplitude anomaly, or 'bright spot', west of the well.

Scholle summarises all this information and concludes that COST No. B-2 encountered good sandstone reservoirs above 10,000 feet, adequate sealing shales and good gas-prone source rocks. The level of organic metamorphism was relatively low, but probably just sufficient for gas generation at the base of the section. The remaining requirement for a hydrocarbon accumulation, namely a viable trap, naturally was not evaluated by this well.

U.S. Geological Survey Circular 750 can be obtained for the cost of a stamp and will enable readers to 'follow the play' as wells are drilled in the Baltimore Canyon basin. It is well worth the extravagance!

MS received August 24, 1977.

Deserts of the World

By M. P. Petrov
*Translated from the 1973
Russian edition
by the Israel Program for
Scientific Translation
New York, John Wiley and Sons,
447 p., 1976
\$57.50*

Reviewed by G. V. Middleton
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This volume is a comprehensive review of the geography of deserts. The first part (10 Chapters, 157 pages) gives maps and brief descriptions of the world's deserts, and closes with some comparisons and a new classification, based on climatic type, morphostructural criteria, nature of surficial materials (10 litho-edaphic types), and geomorphology (landscape types). The second part (3 Chapters, 184 pages) deals mainly with sandy deserts and considers what Bagnold called the physics of blown sand, environmental conditions (including the microclimatology and geochemistry of desert sands) and the adaptations of plants and animals to desert conditions. The third part (3 Chapters, 69 pages) gives a brief review of the natural resources of deserts, and the problems and probable future progress of exploitation and development of desert regions.

For the geologist, the main parts of the book likely to be of interest are the description of deserts, particularly those in Asia (2 maps show the main features of the deserts of Central Asia - China Mongolia - and Middle Asia - southeastern USSR), and the general discussion of sand deserts given in Part II. Comparison may be made with the book *Geomorphology in Deserts* by R. U. Cooke and A. Warren (London, B. T. Batsford, Ltd., 1973) and *Desert Sedimentary Environments* by K. W. Glennie (Amsterdam, Elsevier Publ. Co., 1970). These two works are more restricted in scope: Glennie's book is about sediments found in deserts, and is based very largely on the author's experience in the Arabian Peninsula;