GAS FIND IN OFFSHORE KRISHNA-GODAVARI BASIN

Kathy Shirley, correspondent of *EXPLORER* [American Association of Petroleum Geologists (AAPG)] has highlighted the offshore gas-field discovery in the Krishna-Godavari (KG) Basin of East Coast attracting global attention in a recent issue of the AAPG Newsletter *{Explorer*, v.24, no.l, p.8$_f$ Jan. 2003)

The discovery by the Reliance Group in collaboration with its partner - the Canadian Independent Niko Resources, has been rated among the largest gas discoveries in the year 2002 and the biggest gas field in India in three decades.

According to the information released by the Reliance Partner - Niko Resources, the gas bearing structure lies at an average water depth of 900 m and is 1850 to 2200 m subsea at a distance of 20 km offshore. As per the present plans, Reliance Group intends to develop the field into production by 2004 with a daily output of 1.44 bet.

According to the same report, Reliance has estimated the gas in place at over seven trillion cubic feet, and recoverable reserves at over five trillion cubic feet. 25 development wells are planned in this area.

The discovery of this 'giant' gas-field in the offshore KG-basin augurs well for the country and is likely to transform coastal Andhra Pradesh into a hub of activity with gas pipe lines and related industrial units easing to some extent the energy crunch of the country. This discovery should also propel us to intensified search for oil and gas in the Bengal and Orissa offshore areas with equally bright prospects.

M.S. RAO

REPORT ON THE SHORT TERM COURSE ON FLUID INCLUSIONS IN MINERALS: METHODOLOGIES, PRACTICE AND APPLICATIONS

The above course was organized by the Department of Geology and Geophysics, IIT, Kharagpur during 2nd October to 17 November, 2002. Prof. V.V. Satyamurthy, Dean (CEP), IIT Kharagpur was the chief guest at the inaugural function. In all, there were twelve participants from professional organizations and R&D laboratories such as GSI, AMD, NGRI and NML apart from faculty members/ research scholars from universities. The instructors included Prof. D.C. Srivastava (IIT - Roorkee), Dr. M.K. Panigrahi and the undersigned from the IIT, Kharagpur. Detailed lecture notes and time table were handed over to the participants just before the first theory class. In all, twenty-seven theory and twelve lab hours were devoted to the course.

The theory classes focused attention on the following: elementary/basic aspects of fluid inclusions, inclusion microthermometry, PVTX properties in aqueous, carbonic and aqueous-carbonic fluid systems, analysis of inclusion fluids, thermobarometry, fluid evolution and various applications of fluid inclusion studies (in ore deposit research, metamorphism and deformation of rocks). In between, two lecture hours were devoted to software implementation. Discussions followed each lecture, apart from interventions during lectures.

For the practical (laboratory) classes, two groups of six participants each were organized. First, the necessary microscopic adjustment/alignment for inclusion petrography/microthermometry was introduced. This was followed by demonstration and working principles (including temperature calibration) of the two heating-freezing stages (The Reynolds and the Linkam stages), available at IIT, Kharagpur. The next exercise was on inclusion petrography, before demonstrating phase changes during microthermometry of various inclusion types (aqueous, carbonic and aqueous-carbonic). Each participant individually took freezing-heating runs and that included reproducibility of the microthermometric results. In addition, the available software packages for fluid inclusion data reduction/isochore construction were demonstrated. Practical problems of microthermometry and suggested solutions were an integral part of lab classes. Another aspect of laboratory classes was identification and analysis of gaseous species such as $C0_2$ and CH_4 in carbonic and aqueous-carbonic inclusions by Laser Raman Micro-spectroscopy. Prof. Asoke Mookherjee delivered a two-hour thematic valedictory lecture entitled "Crustal Fluids and Formation of Mineral Deposits", which was well received by the participants and the faculty alike. The Head of the Department of Geology and Geophysics handed over the certificates to the participants

The main objective of the course was to familiarize the participants with different aspects of fluid inclusion research, with major emphasis on microthermometry Apart from lecture notes, photocopies of necessary additional material was given to the participants The participants were also given a chance to evaluate the efficacy of the course through a questionnaire Summing up, it was a rewarding experience and we sincerely hope that the course will have a multiplier effect in their departments/organizations in arousing interest in the vital area of the study of fluids in geological systems and processes

Indian Institute of Technology B MISHRA
Dept of Geology and Geophysics
Kharagpur - 721 302
Email: *bmgg@gg utkgp ernet in*

CORRESPONDENCE

THE NATURE OF EARTH'S INNER CORE - WHAT THE METEORITES TEND TO TELL US

John A Wood, while delivering the Harold Masursky Lecture (Kerr, 2001) has recently mentioned that "We still don't understand what the meteorites are trying to tell us" and "Many meteonticists are not given to trying to interpret data and (are) suspicious of people who do"

The present author (Sen, 1984, 1989 and 1992) who is endeavouring to understand the nature of interior of the earth and the total earth system, based on the authentic and monumental studies of John Wood and others, finds that the stumbling blocks that resist progress in earth science studies are some premature and wrong notions which have been taken as axioms

On the basis of actual data obtained from crustal layer and uppermost part of the mantle, temperature and pressure of earth's inner core have been assumed to be extremely high That part of the earth, which has been proved to be solid on the basis of seismic data, nevertheless, behaves as the fountain-head of terrestrial magnetism Based on density data of earth and its surface rocks and analogy drawn from iron meteorites, the inner core has been considered to be composed principally of iron and nickel All these meteorites are found in fragmented condition evincing their origin from solid part or relatively low temperature zone of a preexisting planet In case of high temperature, after fragmentation of the planet, a melt would have been produced from its interior part which on rapid cooling in space would have given rise to globular bodies with glassy texture instead of broken fragments with crystalline structures

The fact that Neuman lines, found in some iron meteorites, are destroyed at elevated temperatures of 800°C, strongly supports the view that these objects were never exposed to very high temperature after their solidification to form the core of an earth-like planet If this concept is correct, the iron meteorites are very strongly magnetic (Murthy, 1968) a property that has not been acquired during and after their fragmentation - proves beyond doubt that the inner core which is solid, composed of iron and nickel and emanates magnetic lines of force, is itself a huge dipolar permanent magnet Occurrence of low temperature minerals, minerals with water, hydrocarbon compounds and amino acids in the matrix of some chondrites of stony meteorites having sharp globular outlines (Wood, 1969) strongly corroborate that a major portion of the interior of the earth was never exposed to very high temperature-pressure condition

The author draws attention of the earth and planetary scientists to look into the matter so that a thorough investigation in this regard could be undertaken for establishing the truth

Plot no 10, Puranik Layout SUBHASIS SEN
Bharat Nagar,
Nagpur - 440 001

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