

20.06 **Oil Shale Exploration in the Assam-Arakan Basin**

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Studies on oil shale resource assessment in the north eastern part of India commenced with the signing of a contract between BRGM (France), MECL (India) and DGH (India) in September, 2007. Geological mapping, drilling, sampling and analytical work is in progress. Preliminary results of the investigations are presented in this paper. Mineralogically, the Tertiary oil shale occurring with coal seams is mainly composed of clays (illite-kaolinite-halloysite), micas (Mg chlorite) quartz (opal), and carbonates (siderite). Geochemically, the coals are low ash (<10%), high TOC (72-79%) with a petroleum potential (PP) of 140 to 241 Kg/t. They are mainly composed of vitrinite (80-86%), inertinite (4-9%) and low liptinite (2.6-7%). They have very low content of hazardous elements (As < 12.5 ppm; Se < 0.9 ppm; Cd < 0.04 ppm; U < 0.6 ppm). Only Zn, Ni, V exceed 100 ppm in a few samples. The grey to dark shale has organic carbon 5 to 20% and a relative PP of 25 to 78Kg/t. Vitrinite reflectance ranges between 0.56 and 0.65% indicating low maturity and high oil potential, a fact confirmed by the low  $T_{max}$  (435-418°C Rock Eval). Rock Eval 6 analysis of Assam (Makum and Dilli-Jeypore) indicate type II kerogen with high HI and low OI and bear some similarities with black shale of the Toarcian Liassic strata of the Paris basin and algal organic matter (Cameroon Logbada Cretaceous type). Surface geological mapping, geophysical electric sounding and core logging are planned to further evaluate their potential as additional hydrocarbon resource for India.