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Is Drilling in Deepwater Gulf of Mexico Uncorking Bad Genies?

Submersible observations in the northwest quadrant of the Auger Basin have indicated that in addition to hydrocarbons some of the seeps there are also issuing copious volumes of highly radioactive fluids. Upon exit on the seafloor these fluids are the primary source for laterally extensive radium-rich barite deposits. Recent geochemical studies indicate that fluids emerging on the seafloor at barite-bearing seeps are highly saline and anomalously enriched in radium and barium relative to bottom water values. Elemental chemistry traces these highly radioactive fluids to a deep-seated source matching Miocene to Pleistocene-age formation waters. The time of fluid migration from the source to the seafloor appears unusually rapid (<20 years) on the basis of the relative short-lived ^{228}Ra isotope content. Barite chimneys are remarkably young, on the order of 0.5 to 3 years old. The overall results suggest that the Ba-Ra-rich fluid expulsion on the seafloor is rapid and recent. There is no geologic factor that may account satisfactorily for the short-lived and recently accelerated fluid emissions on the seafloor. Importantly, the timing of barite deposition appears to parallel recent exploration and production activities in the area. Whether or not the intensified emissions are related to man-made disturbances in subsurface hydrology or to rapid tectonism of an as yet unidentified geologic nature is an important question that needs to be addressed because of potential harmful effects to marine resources in the Gulf of Mexico.