

URANIUM BEHAVIOUR IN THE ZAIRE ESTUARY

by

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I. INTRODUCTION

Uranium geochemistry in the oceanic system is still poorly known. Past studies to establish uranium mass balances have used highly variable uranium river input concentrations ranging from 0.04 to $1 \mu\text{g}\cdot\text{l}^{-1}$ (KOCZY, 1954; MOORE, 1967; VEEH, 1967; TUREKIAN & CHAN, 1971) resulting in a residence time variation of more than one order of magnitude. Moreover it is usually considered that the uranium removal rate by authigenic material is much lower than the input by rivers (KOCZY, TOMIC & HECHT, 1957; VEEH, 1967). Finally the magnitude of isotopic disequilibrium in the world ocean is strikingly constant, the ^{234}U - ^{238}U activity ratio equaling 1.14 ± 0.03 (KOIDE & GOLDBERG, 1965; KU, 1966; BHAT, 1970). Any attempt to solve these problems requires a better knowledge of average input by rivers and of nature and intensity of estuarine geochemical processes.

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II. SAMPLING AND ANALYTICAL PROCEDURES

Large volume water samples (30 to 50 litres) were taken in river, estuary and plume of the Zaire. For the location of the stations and the general hydrography see EISMA & VAN BENNEKOM (1978). The samples