

Influence of tide on the horizontal loss rate of Cr in Jiaozhou Bay

Key words: Chromium, Horizontal loss, Tide, Settlement, Dilution, Jiaozhou Bay.

Abstract. Taking chromium (Cr) in surface waters in Jiaozhou Bay in June 1982 as an example, this paper analyzed the horizontal loss processes of Cr, as well as the influence of tide on the horizontal loss. Results showed that the horizontal loss of Cr in coastal waters in the east of Jiaozhou Bay were calculated as $65.53 \times 10^{-5} \mu\text{g L}^{-1} \text{m}^{-1}$ and $6.50 \times 10^{-5} \text{m}^{-1}$, or 65.53 YDFa and 6.50 YDFr, respectively. The horizontal loss of Cr in coastal waters in the north of Jiaozhou Bay were calculated as $55.03 \times 10^{-5} \mu\text{g L}^{-1} \text{m}^{-1}$ and $5.63 \times 10^{-5} \text{m}^{-1}$, or 55.03 YDFa and 5.63 YDFr, respectively. When the tide is out, the direction was from the northeast of the bay to the bay mouth and was parallel to the loss direction of Cr, and the dilution of Cr contents was enhancing, and resulting in rapid settlement of Cr from surface waters to bottom waters. When the tide is in, the direction was from the northeast of the bay to the bay mouth and was perpendicular to the loss direction of Cr, and the dilution of Cr contents was limited, and resulting in little settlement of Cr from surface waters to bottom waters.