

Satellite data interpretation of ground-water-seawater flow directions, Merseyside, UK: implications for accessing saline intrusion

S. MUKHERJEE.¹, MOHAMMAD E.A.¹ and R. H. WORDEN¹

¹*Department of Earth & Ocean Sciences, The University of Liverpool*

In the groundwater of Merseyside Liverpool, in some places chloride and sulphate concentrations are very high in comparison to the other places. Near Kingsway, Walton, Bootle, Kirk dale the groundwater is very high in chloride and sulphate content. While Speke, Garston, Aigbith and Hale areas are showing low chloride and sulphate in groundwater. All these areas are on the bank of Mersey Estuary and connected with faults. Variations in the chloride and sulphate content of groundwater are depending on the deposited material on riverbank as well as character of the faults. In some cases the fault boundaries are sealed or partially sealed by clay deposits. SPOT satellite data have been used for the Merseyside area of Liverpool. Digitally enhanced and processed data has the potential to locate the relative variations of sand and clay deposits in river bank. Further the SPOT data model was confirmed by the IKONOS satellite data. Sand deposits show higher pixel values in comparison with clay deposits in near infrared spectral region (NIR).