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Real-Time Monitoring Approaches of Groundwater Conductivity and Level to Pre-Alert the Seawater Intrusion in Sand Coast of Liaodong Bay of China

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Abstract : At present, many coastal areas around the world suffer from seawater intrusion. Seawater intrusion is the superimposed result of two factors which are nature and human social economical activities in particular area. In recent years, due to excessive exploitation of groundwater, the seawater intrusion phenomenon aggravate in coastal zone of the Bohai and Huanghai seas in our country. Moreover, with sea-level rising, the original hydrodynamic equilibrium between saltwater and freshwater has been damaged to a certain extent, and it will further aggravate seawater intrusion in the land plains. In addition, overexploitation of groundwater declined groundwater level and increase saltwater intrusion in coastal areas. Therefore, in view of the sensitivity and vulnerability of the impact of sea-level rise in the future, the risk of sea-level rise in coastal zone should be considered, reasonable exploitation, utilization and management of coastal zone's groundwater should be formulated. The response mechanism of sea-level rise should be studied to prevent and reduce the harm of seawater intrusion, which has important theoretical and realistic significances. In this paper, through the long-term monitoring of groundwater level and conductibility in the transition region of seawater intrusion for the sand coast area, realtimely master the situation of seawater intrusion. Combined with the seasonal exploitation station of groundwater and sea level variation, early alert the seawater intrusion to prevent and reduce the harm of seawater intrusion.

Keywords : groundwater level, sea level, seawater intrusion, sand coast
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