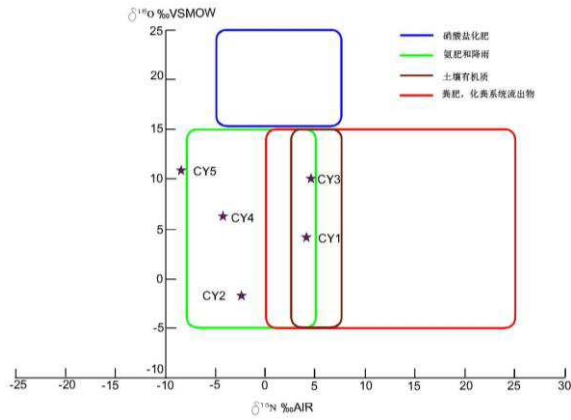


The Sources Identification of Ammonia in Groundwater Based on Isotopes Data in an Agricultural Area, Northeastern China

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An integrated study based on hydrogeochemical, and isotopic approaches for nitrate was conducted to governing groundwater contaminants in an agricultural area, northeastern China.



Based on the hydrogeological conditions, surface water samples, confined groundwater samples and unconfined groundwater samples have been selected and tested, the mixing ratios of confined and unconfined groundwater have been calculated based on the conservation law of isotopes. The study results show that, infiltration of irrigation water and lateal flow input of unconfined groundwater from the upper stream are the main sources of local ammonia in unconfined groundwater, leakage recharge of upper unconfined groundwater and lateal flow input of confined groundwater from the upper stream are the main sources of local ammonia in confined groundwater; the mixing ratios calculation results show that, about 50% of the ammonia in unconfined groundwater come from lateal flow input of unconfined groundwater, about 50.39 % to 98.42 % of the ammonia in confined groundwater come from lateal flow input of confined groundwater, which means that local source has little effects on the concentration of ammonia in confined aquifer; the mixing ratios of unconfined groundwater in confined groundwater have abvious negative correlation with the thickness of aquiclude layer.