Distribution Characteristics and Enrichment Mechanisms of Fluoride in Alluvial–Lacustrine Facies Clayey Sediments in the Land Subsidence Area of Cangzhou Plain, China

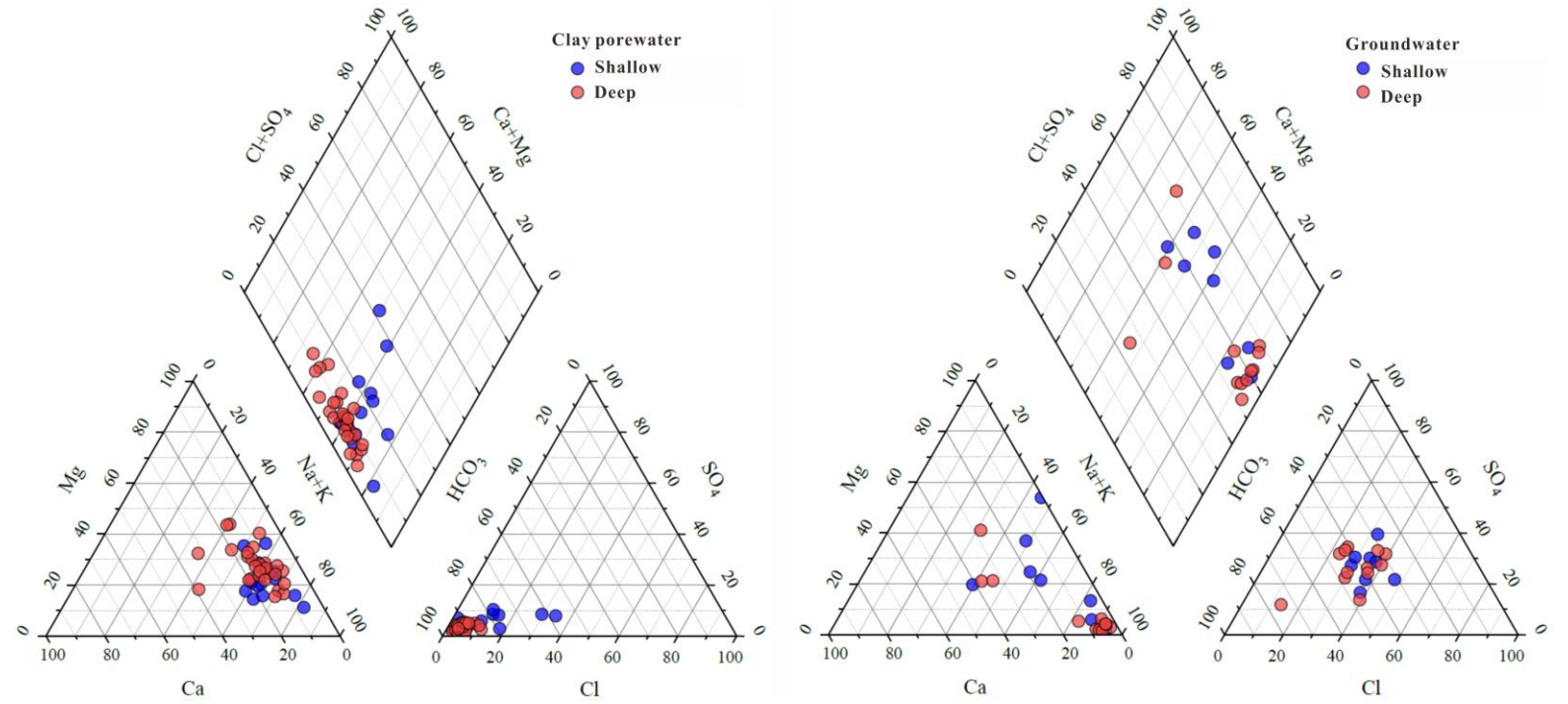

Figure S1. Piper diagram of clay porewater samples from borehole and groundwater samples from monitoring wells.

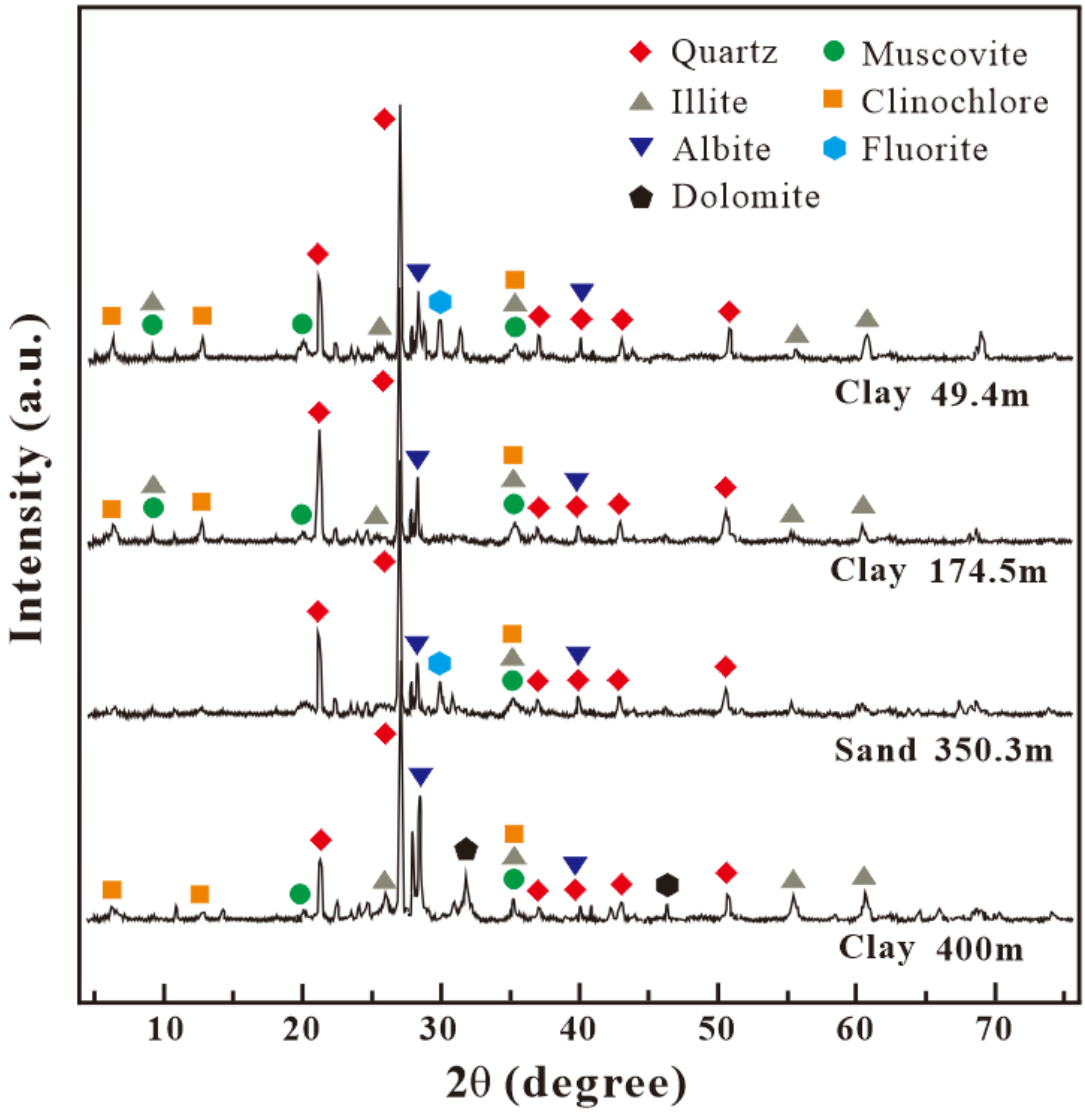

Figure S2. X-ray diffractograms of the representative sediment samples from borehole.

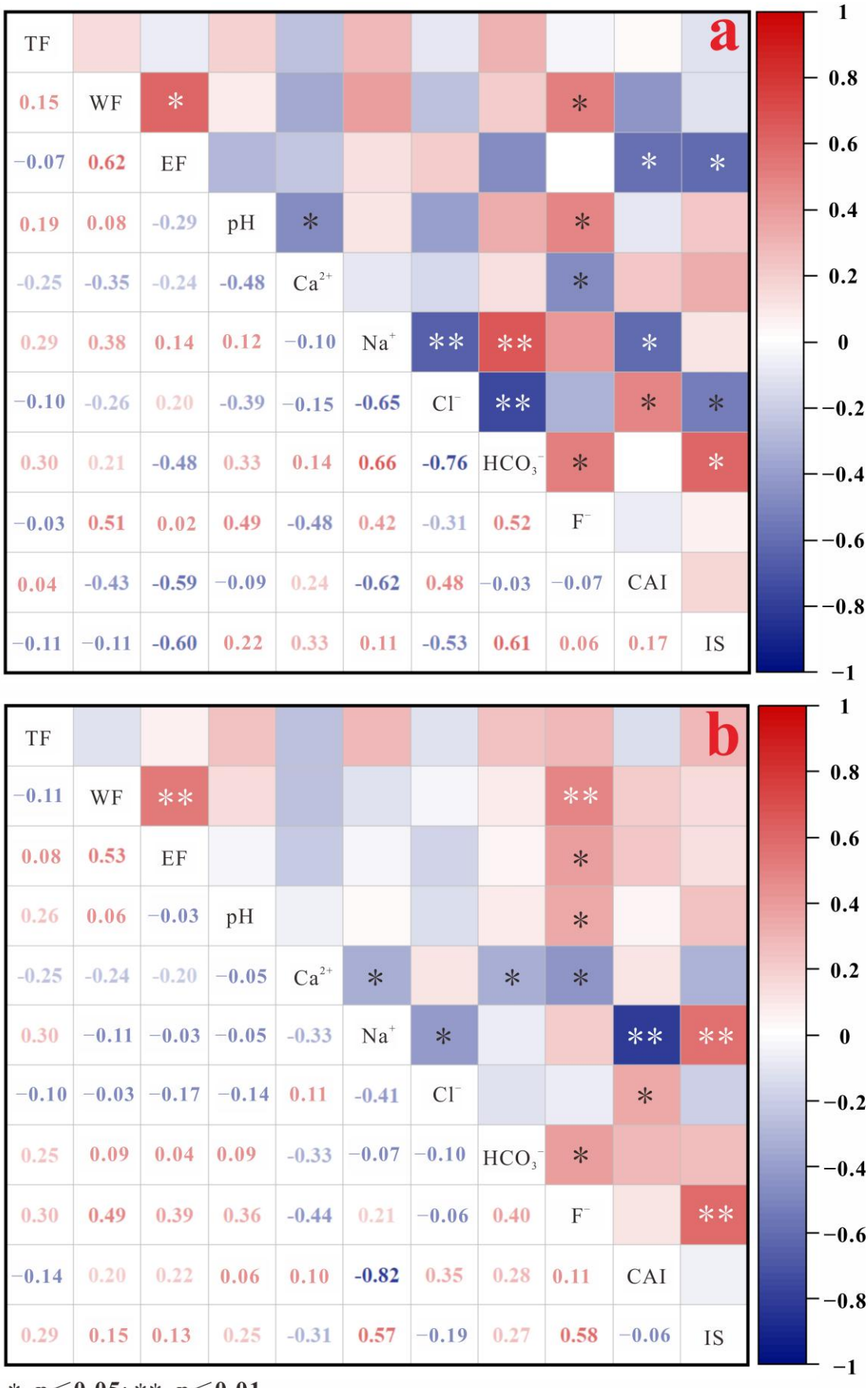

Figure S3. Pearson correlation heat map of **(a)** shallow and **(b)** deep samples from the borehole.

Table S1. Characteristic parameters of sediment particle size.

Sorting (σ_i)		**Kurtosis (K_G)**	
<1.25	Very well sorted	<0.67	Very platykurtic
1.27–1.41	Well sorted	0.67–0.9	Platykurtic
1.41–1.62	Moderately well sorted	0.9–1.11	Mesokurtic
1.62–2.00	Moderately sorted	1.11–1.5	Leptokurtic
2.00–4.00	Poorly sorted	1.5–3.0	Very leptokurtic
4.00–16.00	Very poorly sorted	> 3.0	Extremely leptokurtic
>16.00	Extremely poorly sorted		

The average of particle size (M_G), standard deviation (σ_i), and kurtosis (K_G) were calculated by Eqs. (1) ~ (3).

$$M_G = \frac{\Phi_{16} + \Phi_{50} + \Phi_{84}}{3} \quad (1)$$

$$\sigma_i = \frac{\Phi_{84} - \Phi_{16}}{4} + \frac{\Phi_{95} - \Phi_5}{6.6} \quad (2)$$

$$K_G = \frac{\Phi_{95} - \Phi_5}{2.44\,(\Phi_{75} - \Phi_{25})} \quad (3)$$

The Φ_5, Φ_{16}, Φ_{25}, Φ_{50}, Φ_{75}, Φ_{84}, and Φ_{95} represent the corresponding particle size values at the 5%, 16%, 50%, 75%, 84%, and 95% sites of the cumulative particle size curve, respectively.