Supplementary Material

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计算机软件著作权登记证书

证书号：软著登字第7768761号

软件名称：渗透性反应墙修复污染地下水流网分析与质点示踪软件
[简称：PRB-Flow]
V1.0

著作权人：清华大学

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No. 08499608

2021年07月15日

Fig. S1 The software copyright certificate of PRB-Flow code.

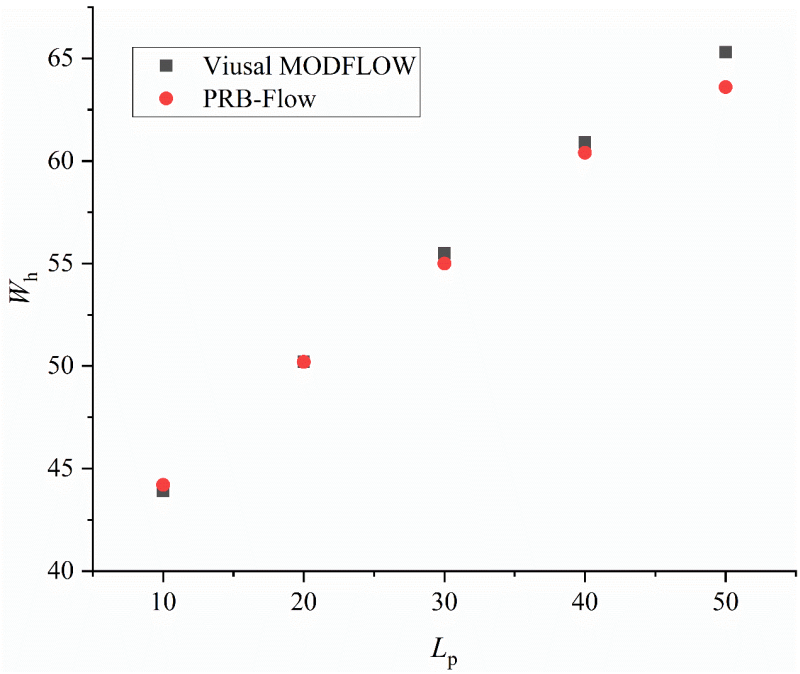

Fig. S2 The horizontal 2D capture width (W_h) of PC-PRB comparison at different pipe length (L_p) between PRB-Flow and Visual MODFLOW.

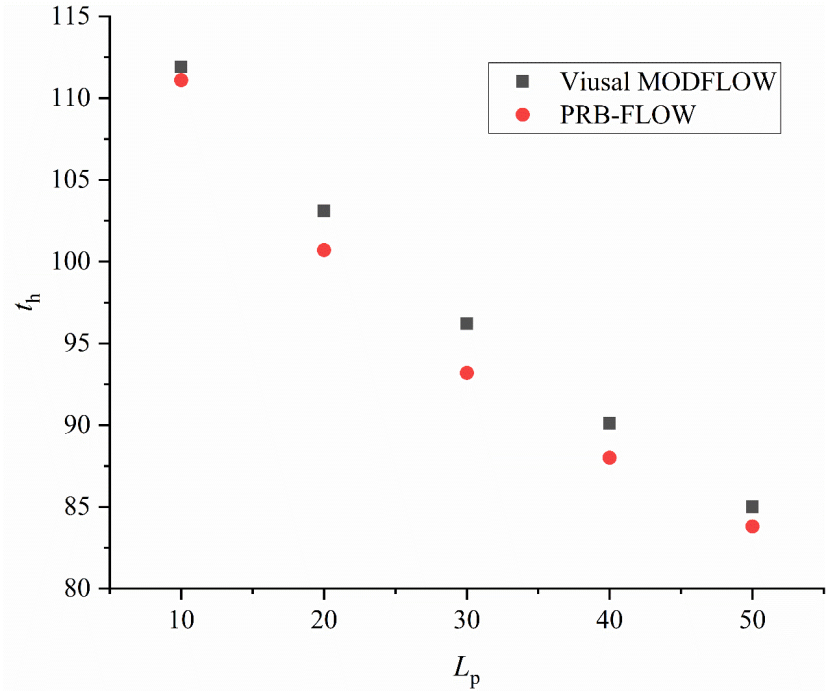

Fig. S3 The horizontal 2D residence time (t_h) of PC-PRB comparison at different pipe length (L_p) between PRB-Flow and Visual MODFLOW.

Table S1 The relative error (δ) between PRB-Flow and Visual MODFLOW about W_h and t_h at different pipe length (L_p).

Parameters	$\delta_{Lp=10}$ (%)	$\delta_{Lp=20}$ (%)	$\delta_{Lp=30}$ (%)	$\delta_{Lp=40}$ (%)	$\delta_{Lp=50}$ (%)
W_h	0.68	0	–0.90	–0.82	–2.6
t_h	–0.71	–2.33	–3.12	–2.33	–1.41

Table S2 The hydraulic parameters and pertinent values of the two confined aquifers and PC-PRB.

System			Model Parameters	Values
Aquifer			Hydraulic conductivity, K_a	K_x =K_y =1.0 m/d, K_z =0.1 m/d
			Effective porosity, n_a	0.3
			Hydraulic gradient, J	0.01
PC system	Passive well		Hydraulic conductivity, K_w	K_x =K_y =K_z =10000.0 m/d
			Effective porosity, n_w	1.0
	Water pipe	Pipe wall	Hydraulic conductivity, K_{pw}	0.0001 m/d
			Effective porosity, n_{pw}	0.01
		Inside the pipe	Hydraulic conductivity, K_{pi}	K_x =K_y =K_z =10000.0 m/d
			Effective porosity, n_{pi}	1.0
	Buffer layer		Hydraulic conductivity, K_b	K_x =K_y =K_z =10000.0 m/d
			Effective porosity, n_b	1.0
PRB system			Hydraulic conductivity, K_{PRB}	K_x =K_y =10.0 m/d, K_z =1.0 m/d
			Effective Porosity n_r	0.45

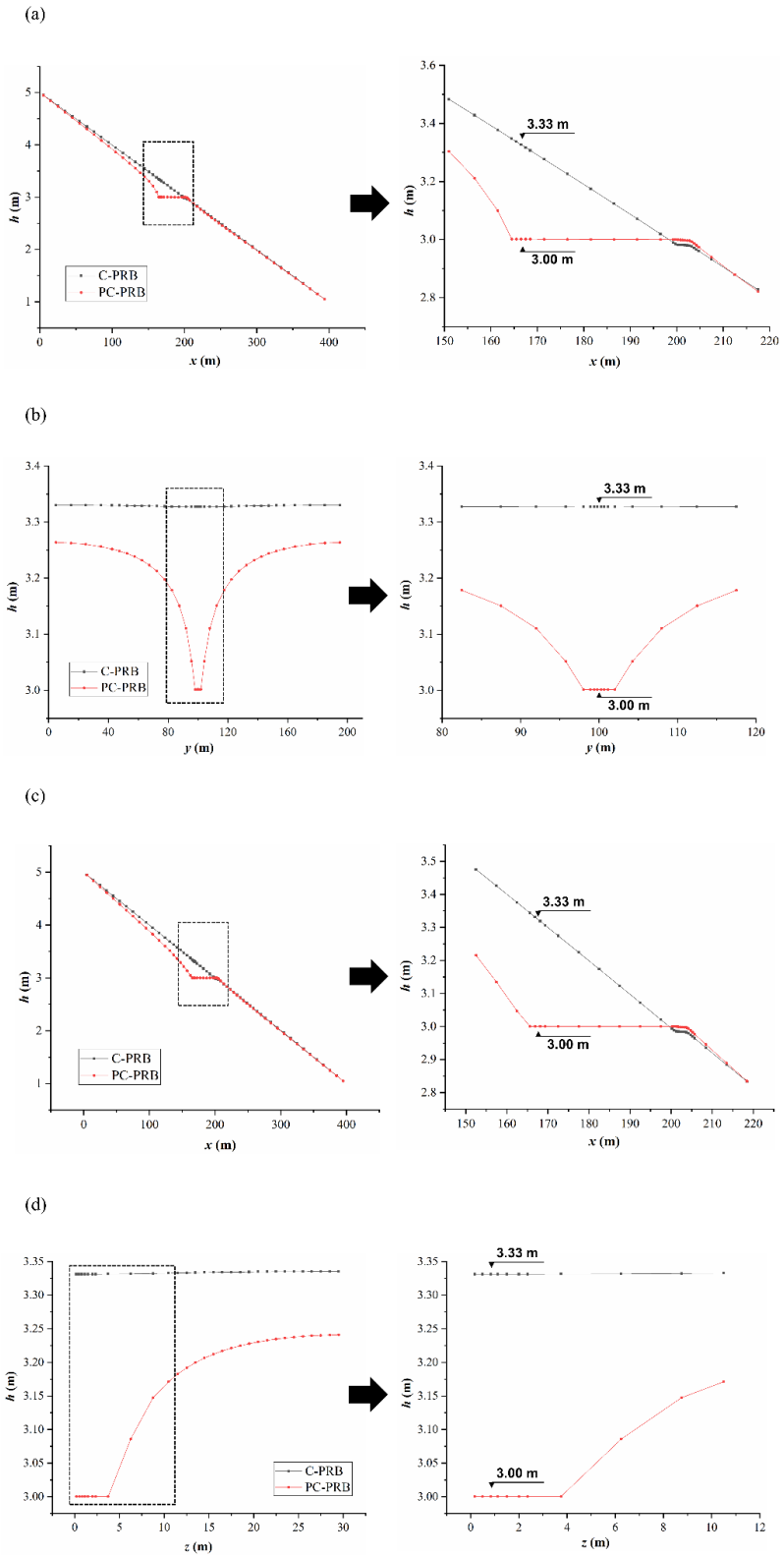

Fig. S4 The transient profiles of head (*h*) comparison between PC-PRB and C-PRB along the passive well: (a) the horizontal 2D *h* along the x directions, (b) the horizontal 2D *h* along the y directions, (c) the vertical 2D *h* along the x directions, (d) the vertical 2D *h* along the z directions.