

Table 5 Elemental affinities deduced from Pearson's correlation coefficients between individual elements in 9 minable coal seams and ash yield, and selected elements or element combinations.

Correlation coefficients with ash yield		
Group 1	$r_{\text{ash}}=0.7-0.8$	Y, Al, Si, Ti, Sc, Th, Pb
Group 2	$r_{\text{ash}}=0.5-0.69$	Cu, Be, V, Li, Mo, Mg, Ca, Na, Zn, Sn, K, Fe, Mn, Ni
Group 3	$r_{\text{ash}}=0.35-0.49$	P, Bi, Cr, Cd
Group 4	$r_{\text{ash}}<0.35$	As, Se, Ba, Sb, S, Co
Correlation coefficients with selected elements combinations		
$r_{\text{Ca+Mg}}$	>0.7	Fe, P, Zn, Sn, Na, Th, Pb
	$0.5-0.7$	Bi, Mn, Si, Ti, Cd, Li
	$0.35-0.49$	Sc, Se
$r_{\text{Al+Si}}$	>0.7	V, Sc, Be, Bi, Mo, Li, Ni
	$0.5-0.7$	Sb, Y, Sn, Pb, Ni, Co
	$0.35-0.49$	Cd
$r_{\text{S+Fe}}$	>0.7	No elements
	$0.5-0.7$	Co, Bi, Sb, As
Correlation coefficients with selected elements		
$r_{\text{Ca-Mg}}=0.82$; $r_{\text{Mn-Fe}}=0.73$; $r_{\text{Mn-Mg}}=0.78$; $r_{\text{Mn-Ca}}=0.80$; $r_{\text{Fe-Se}}=0.75$; $r_{\text{Ni-S}}=0.15$; $r_{\text{Se-Pb}}=0.66$; $r_{\text{Li-Si}}=0.69$; $r_{\text{Li-Al}}=0.72$; $r_{\text{Fe-S}}=0.2$; $r_{\text{Sb-S}}=0.6$		