

Table 8-4 summarizes elemental leaching on an absolute basis, in cumulative mg of element leached per Kg of sample during the 14 week test. The trends are similar to the relative fraction data in table 8-3. Sample HCS-IN leached about 4 times as much sulfur as the next most active sample, LKFC-PA. The blank sample MKSS-PA leached the least. BCS3-PA leached more calcium than four other rocks and has the largest neutralization potential values. The rocks were also ranked from most (1), to least (5) based on the total leached for each element, and an overall average rank computed.

Table 8-4  
Total Element Content and Absolute Amount Leached

Sample Element	BCS3-PA		HCS-IN		KBF-WV		LKFC-PA		MKSS-PA	
	Total <sup>(2)</sup> (%)	Leached <sup>(3)</sup> (mg/Kg)	Total (%)	Leached (mg/Kg)	Total (%)	Leached (mg/Kg)	Total (%)	Leached (mg/Kg)	Total (%)	Leached (mg/Kg)
Fe	6.66	0.73	6.36	96.1	6.14	0.32	7.74	0.946	2.25	0.069
Mn	0.10	0.996	0.04	68.5	0.10	0.102	0.18	127	0.05	3.12
Al	10.83	0.032	6.66	20.8	8.49	0.015	9.41	0.086	5.89	0.018
Ca	1.61	543	1.61	1443	0.74	205	0.62	323	1.29	300
Mg	1.45	268	0.97	1123	1.09	191	1.13	371	0.54	70.9
Na	0.18	22.9	0.37	119	0.55	5.4	0.16	12.7	0.10	3.33
K	2.91	1.07	2.28	1.24	2.85	1.25	3.05	1.07	1.99	0.093
S	0.53	1066	5.54	8576	0.20	299	0.81	2187	0.09	111
Se	<3	0.065	81	8.97	<3	0.013	<3	0.204	<3	0.014
Zn	171	0.095	456	.043	126	0.084	151	1.13	86	0.188
pH Week 1	7.12		6.61		7.19		5.45		7.20	
pH Week 14	7.14		3.24		7.18		6.27		7.16	
Average Rank	2.7		1.5		3.7		1.8		3.7	

(1) Median values of all columns, all labs.

(2) Se and Zn total concentrations are in ppm.

(3) Leached fraction calculated as cumulative total mass of element in leachate / Kg of sample.

The acid forming shale HCS-IN leached the greatest elemental fraction and absolute amounts for most parameters in tables 8-3 and 8-4. The samples rank for overall weathering intensity and element leaching as follows, using either relative or absolute amount leached:

$$\text{HCS-IN}(\%S=5.15) > \text{LKFC-PA}(\%S=0.91) > \text{BCS3-PA}(\%S=0.59) > \text{KBF-WV}(\%S=0.31) \approx \text{MKSS-PA}(\%S=0.04)$$

Weathering intensity follows the same ranking order as the original sulfur content of the rocks. Pyrite content indicates in general terms, how intensely the rock will weather.