

Repetitive Regeneration of Media #1 after REE Sorption from Brine 1 at 70C

This dataset outlines the reusability of media #1 over many cycles.

Experimental Conditions

- 150mL of 2ppm each 7 metal spike (La, Ce, Pr, Nd, Eu, Tb, Dy) Brine#1
- 2g media #1
- Temperature at 70C
- pH 5.5
- Shaker table at 310 rpm's for 90 minutes
- Wash media with pH 5.5 DI water
- Strip media with 2M Nitric Acid
- Regenerate media using 150mL of pH 5.5 Brine #1 solution until pH of media is between 5-5.5
- Repeat loading, washing, and stripping steps for 5 cycles
- Analysis of samples by ICP-MS

Table 1: Shows the percentage of REE's removed from solution in each cycle, the capacity of REE's on the media for each cycle, and the percentage of REE's recovered from the wash and strip for each cycle.

Regeneration Study GG2-90 (ave. duplicate runs)					
Shaker test with strip and wash					
Brine 1M, 14 ppm REE7, 150 ml, 2 g Media 1, 90 minutes at 70oC					
	Run 1	Run 2	Run 3	Run 4	Run 5
REE removed					
% wt/wt of available REE	25.0%	58.5%	51.1%	50.2%	50.6%
% wt/wt media	0.028%	0.065%	0.057%	0.056%	0.056%
REE Recovered					
% wt/wt removed	113.1%	94.0%	89.2%	97.2%	93.9%