

Supplementary material

Table S1: Composition of the Hanford Secondary Waste (HSW) solution

Order of addition	Analyte	Target	Reagent	Assay	Target weight
		6X*, M			(1 L)
1	Ag ⁺	3.80E-5	AgNO ₃	0.999	0.0064
1	As ⁵⁺	2.09E-4	Na ₂ HAsO ₄ *7H ₂ O	1.000	0.0652
1	Al ³⁺	5.63E-1	Al(OH) ₃	0.765	57.4473
1	Cd ²⁺	9.42E-6	Cd(NO ₃) ₂ *4H ₂ O	0.985	0.0030
1	CO ₃ ²⁻	1.37E-1	Na ₂ CO ₃	1.000	14.5021
1	Cr ⁶⁺	1.22E-3	Na ₂ Cr ₂ O ₇ *2H ₂ O	0.990	0.3666
1	Hg ²⁺	6.78E-5	Hg(NO ₃) ₂ *H ₂ O	0.980	0.0237
1	PO ₄ ³⁻	4.12E-2	Na ₂ HPO ₄ *7H ₂ O	0.990	11.1578
1	Si ⁴⁺	1.13E-2	Na ₂ SiO ₃	0.980	1.4050
1	SO ₄ ²⁻	2.65E-2	Na ₂ SO ₄	0.990	3.7963
1	NO ₃ ⁻	1.97	NaNO ₃	0.980	170.3539
1	NO ₂ ⁻	7.20E-2	NaNO ₂	0.980	5.0690
1	Cl ⁻	1.35E-1	NaCl	0.980	8.0508
1	F ⁻	3.34E-3	NaF	0.990	0.1364
1	K ⁺	3.50E-3	KNO ₃	0.990	0.3572
1	Pb ²⁺	5.39E-5	Pb(NO ₃) ₂	0.990	0.0180
1	TOC	5.02E-1	Na ₂ C ₂ O ₄	0.980	68.7023
1	TOC	6.10E-2	Oxalic acid dihydrate	0.980	7.8408
2	H ₂ O	—	H ₂ O	—	770.4100
3	OH ⁻	2.38	NaOH	0.987	96.6080
4	I ⁻	3.94E-4	NaI	0.999	0.0591
4	(Tc ⁷⁺) Re ⁷⁺	2.69E-4	HReO ₄	0.562	0.0890
			Total (g)		1216.4680

*) original solution 6x concentrated