

Table DR1. U-Th-Pb isotopic data for magmatic zircon from intrusive rocks of the Cougar Creek Complex

Samp. (a)	Compositional Parameters						Radiogenic Isotope Ratios								Isotopic Ages					
	$^{206}\text{Pb}^*$ $\times 10^{-13}$ mol (b)	mol % (b)	Pb_c^* (b)	Pbc (pg) (b)	^{206}Pb ^{204}Pb (c)	^{208}Pb ^{206}Pb (d)	^{207}Pb ^{206}Pb (d)	% err (e)	^{207}Pb ^{235}U (d)	% err (e)	^{206}Pb ^{238}U (d)	% err (e)	corr. coef.	^{207}Pb ^{206}Pb (f)	^{207}Pb ^{235}U (f)	% (e)	^{207}Pb ^{238}U (f)	^{206}Pb ^{238}U (f)	% (e)	
CC08-06																				
z1	0.541	99%	34	0.37	2231	0.102	0.051561	0.262	0.298736	0.299	0.042021	0.071	0.606	265.97	6.02	265.41	0.70	265.35	0.18	
z2	0.500	99%	33	0.36	2123	0.109	0.051408	0.284	0.296036	0.320	0.041765	0.073	0.574	259.19	6.53	263.30	0.74	263.76	0.19	
z3	0.237	99%	21	0.28	1313	0.126	0.051754	0.471	0.298160	0.522	0.041783	0.107	0.557	274.57	10.78	264.96	1.22	263.88	0.28	
z4	0.772	99%	57	0.32	3662	0.105	0.051489	0.161	0.295330	0.194	0.041600	0.061	0.665	262.78	3.69	262.75	0.45	262.74	0.16	
z5	0.617	99%	35	0.42	2259	0.100	0.051661	0.268	0.296141	0.301	0.041575	0.069	0.569	270.45	6.14	263.38	0.70	262.59	0.18	
z6	0.598	99%	20	0.70	1317	0.067	0.051473	0.426	0.296212	0.464	0.041737	0.073	0.580	262.07	9.77	263.44	1.08	263.59	0.19	
z7	0.477	99%	21	0.56	1325	0.119	0.051339	0.398	0.296120	0.438	0.041833	0.067	0.639	256.10	9.15	263.37	1.02	264.18	0.17	
z8	0.195	97%	11	0.43	710	0.088	0.051665	0.744	0.296578	0.812	0.041634	0.129	0.585	270.59	17.05	263.72	1.89	262.95	0.33	
z9	0.208	98%	15	0.33	995	0.122	0.051114	0.891	0.294023	0.959	0.041720	0.138	0.544	245.97	20.52	261.72	2.21	263.48	0.36	
z10	0.283	98%	16	0.41	1077	0.094	0.051304	0.581	0.294092	0.633	0.041575	0.108	0.546	254.51	13.37	261.78	1.46	262.59	0.28	
z11	0.455	99%	24	0.44	1612	0.081	0.051277	0.340	0.296032	0.380	0.041871	0.071	0.613	253.31	7.83	263.30	0.88	264.42	0.19	
CC08-03																				
z1	0.114	96%	8	0.35	515	0.150	0.051391	1.012	0.296214	1.093	0.041804	0.135	0.643	258.41	23.25	263.44	2.54	264.00	0.35	
z3	0.104	95%	6	0.45	369	0.130	0.051333	1.522	0.295549	1.634	0.041758	0.190	0.628	255.80	34.98	262.92	3.79	263.72	0.49	
z4	0.207	97%	11	0.46	703	0.088	0.051424	0.850	0.295102	0.922	0.041620	0.130	0.598	259.87	19.53	262.57	2.13	262.87	0.34	
z5	0.457	98%	18	0.61	1165	0.106	0.051476	0.432	0.295274	0.475	0.041603	0.079	0.608	262.19	9.91	262.70	1.10	262.76	0.20	
z6	0.357	97%	9	0.92	614	0.108	0.051314	0.863	0.295526	0.930	0.041769	0.104	0.685	254.97	19.83	262.90	2.15	263.79	0.27	
z7	0.058	86%	2	0.78	132	0.119	0.051027	5.543	0.293296	5.796	0.041687	0.400	0.653	242.05	127.73	261.15	13.35	263.28	1.03	
z8	0.112	92%	3	0.79	235	0.139	0.051985	2.284	0.299289	2.443	0.041756	0.205	0.796	284.73	52.22	265.84	5.72	263.71	0.53	
z9	0.271	96%	8	0.83	519	0.142	0.051224	1.093	0.293173	1.176	0.041510	0.139	0.634	250.92	25.14	261.05	2.71	262.18	0.36	
CC-8-3-1																				
z1	0.574	99%	21	0.65	1364	0.115	0.051234	0.405	0.283977	0.456	0.040199	0.095	0.609	251.39	9.31	253.81	1.02	254.07	0.24	
z2	0.354	98%	14	0.62	889	0.117	0.051224	0.625	0.284294	0.703	0.040253	0.167	0.560	250.92	14.37	254.06	1.58	254.40	0.42	
z3	0.351	98%	17	0.50	1101	0.122	0.051221	0.489	0.283944	0.553	0.040205	0.125	0.591	250.80	11.25	253.78	1.24	254.10	0.31	
z4	0.341	98%	16	0.54	986	0.142	0.051200	0.570	0.284172	0.643	0.040254	0.156	0.562	249.84	13.12	253.96	1.44	254.41	0.39	
z5	0.315	98%	16	0.48	1029	0.113	0.051221	0.532	0.284204	0.601	0.040242	0.141	0.580	250.80	12.25	253.99	1.35	254.33	0.35	
CC08-01																				
z1	2.528	97%	8	7.15	550	0.103	0.051129	0.621	0.277511	0.696	0.039365	0.129	0.643	246.66	14.30	248.68	1.53	248.90	0.31	
z2	3.580	100%	212	0.42	13164	0.146	0.051180	0.063	0.277597	0.105	0.039338	0.054	0.876	248.93	1.46	248.75	0.23	248.73	0.13	
z3	3.482	100%	192	0.43	12331	0.107	0.051165	0.058	0.278139	0.102	0.039427	0.054	0.908	248.27	1.34	249.18	0.23	249.28	0.13	
z4	10.754	100%	237	1.06	15489	0.087	0.051219	0.049	0.277909	0.103	0.039352	0.067	0.920	250.68	1.13	249.00	0.23	248.82	0.16	
z5	4.108	100%	212	0.46	13746	0.096	0.051197	0.059	0.276564	0.102	0.039179	0.053	0.892	249.71	1.36	247.93	0.22	247.74	0.13	
z6	3.328	100%	86	0.89	5746	0.069	0.051282	0.096	0.278099	0.134	0.039331	0.056	0.783	253.52	2.21	249.15	0.30	248.69	0.14	
z7	2.824	100%	61	1.11	3922	0.114	0.051199	0.137	0.278168	0.171	0.039405	0.058	0.704	249.78	3.15	249.20	0.38	249.14	0.14	
z8	2.075	100%	63	0.77	4137	0.085	0.051109	0.143	0.277666	0.177	0.039403	0.060	0.675	245.74	3.30	248.80	0.39	249.13	0.15	
z9	2.334	100%	85	0.63	5710	0.058	0.051164	0.104	0.277865	0.140	0.039388	0.056	0.763	248.22	2.39	248.96	0.31	249.04	0.14	

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Samp.	Compositional Parameters					Radiogenic Isotope Ratios									Isotopic Ages					
	$^{206}\text{Pb}^*$ $\times 10^{-13}$ mol	mol %	Pb^*	Pbc	^{206}Pb	^{208}Pb	^{207}Pb	% err	^{207}Pb	^{206}Pb	corr.	^{207}Pb	^{207}Pb	^{206}Pb	^{206}Pb	^{207}Pb	^{207}Pb	^{206}Pb		
	(a)	(b)	(b)	(b)	(c)	(d)	(d)	(e)	(d)	(d)	coef.	(f)	(f)	(f)	(e)	(f)	(f)	(e)		
CC07-02																				
z1	2.134	99%	47	1.14	2881	0.165	0.050697	0.181	0.253846	0.218	0.036315	0.067	0.663	227.05	4.18	229.70	0.45	229.95	0.15	
z2	1.216	99%	37	0.83	2248	0.180	0.050742	0.242	0.253549	0.283	0.036240	0.079	0.618	229.14	5.59	229.45	0.58	229.48	0.18	
z3	1.173	98%	18	1.69	1082	0.188	0.050748	0.473	0.253984	0.532	0.036299	0.108	0.620	229.39	10.93	229.81	1.09	229.85	0.24	
z4	0.714	98%	19	0.90	1226	0.142	0.050884	0.440	0.254288	0.495	0.036245	0.101	0.613	235.58	10.16	230.05	1.02	229.51	0.23	
z5	0.544	96%	10	1.74	496	0.517	0.050715	1.051	0.257384	1.168	0.036808	0.208	0.622	227.90	24.29	232.56	2.43	233.02	0.48	
z6	0.354	95%	6	1.54	369	0.122	0.050873	1.394	0.253146	1.549	0.036089	0.271	0.632	235.09	32.16	229.13	3.18	228.55	0.61	
z7	0.835	99%	39	0.54	2366	0.187	0.050696	0.254	0.253095	0.294	0.036208	0.076	0.625	227.05	5.87	229.09	0.60	229.29	0.17	
z10	1.300	100%	88	0.40	5039	0.243	0.050722	0.184	0.253410	0.218	0.036235	0.066	0.631	228.22	4.25	229.34	0.45	229.45	0.15	
CC07-04																				
z1	0.188	96%	8	0.60	494	0.125	0.050735	1.375	0.253226	1.497	0.036199	0.219	0.607	228.82	31.75	229.19	3.07	229.23	0.49	
z2	0.338	98%	12	0.66	800	0.103	0.050610	0.651	0.252894	0.728	0.036241	0.142	0.612	223.10	15.05	228.92	1.49	229.49	0.32	
z3	0.336	98%	16	0.51	1030	0.131	0.050697	0.522	0.253328	0.588	0.036241	0.129	0.596	227.06	12.06	229.28	1.21	229.49	0.29	
z4	0.207	97%	9	0.56	587	0.110	0.050660	0.932	0.253076	1.041	0.036232	0.221	0.574	225.37	21.54	229.07	2.13	229.43	0.50	
z5	0.238	97%	11	0.54	692	0.149	0.050637	0.781	0.252896	0.870	0.036222	0.161	0.618	224.33	18.04	228.93	1.78	229.37	0.36	
CC08-05																				
z1	0.526	99%	27	0.46	1763	0.106	0.050757	0.554	0.253376	0.579	0.036205	0.130	0.298	229.79	12.79	229.31	1.19	229.27	0.29	
z2	0.616	98%	15	0.96	994	0.091	0.050760	0.514	0.253581	0.559	0.036232	0.072	0.662	229.93	11.87	229.48	1.15	229.44	0.16	
z3	0.334	98%	15	0.54	958	0.096	0.051004	0.905	0.254619	0.960	0.036207	0.145	0.444	241.00	20.86	230.32	1.98	229.28	0.33	
z4	1.965	100%	102	0.45	6669	0.092	0.050755	0.103	0.253418	0.136	0.036213	0.054	0.750	229.70	2.37	229.35	0.28	229.32	0.12	
z5	1.082	99%	53	0.49	3362	0.114	0.050894	0.164	0.254257	0.200	0.036233	0.068	0.643	236.01	3.79	230.03	0.41	229.44	0.15	
CC-7-17-1																				
z1	0.879	97%	10	1.99	695	0.092	0.050672	0.716	0.252817	0.800	0.036186	0.146	0.636	225.94	16.54	228.86	1.64	229.15	0.33	
z2	1.378	99%	23	1.38	1543	0.088	0.050650	0.333	0.252659	0.385	0.036179	0.110	0.588	224.94	7.69	228.73	0.79	229.10	0.25	
z3	0.375	96%	10	1.34	447	0.705	0.050578	1.153	0.254967	1.285	0.036561	0.246	0.606	221.67	26.66	230.60	2.65	231.48	0.56	
z4	0.586	98%	17	1.03	891	0.398	0.050631	0.621	0.248319	0.698	0.035571	0.162	0.562	224.07	14.37	225.21	1.41	225.32	0.36	
z5	0.457	97%	8	1.27	569	0.072	0.050270	0.926	0.250488	1.028	0.036139	0.179	0.630	207.50	21.47	226.97	2.09	228.86	0.40	
z6	0.495	98%	12	1.02	758	0.112	0.051004	0.713	0.254221	0.810	0.036150	0.222	0.550	241.01	16.42	230.00	1.67	228.92	0.50	
z7	0.693	99%	28	0.58	1833	0.076	0.050666	0.294	0.253288	0.345	0.036257	0.109	0.592	225.68	6.79	229.24	0.71	229.59	0.25	
z8	0.271	98%	13	0.48	881	0.092	0.050339	0.678	0.250101	0.763	0.036033	0.195	0.539	210.70	15.72	226.66	1.55	228.20	0.44	

(a) z1, z2, etc., are labels for fractions composed of single zircon or sphene grains, or fragments; all zircon fractions were annealed and chemically abraded after Mattinson (2005).

(b) Pb* and Pbc represent radiogenic and common Pb, respectively; mol % $^{206}\text{Pb}^*$ with respect to radiogenic, blank and initial common Pb.(c) Measured ratio corrected for spike and fractionation only. Mass fractionation correction of 0.22 ± 0.02 (1-sigma) /amu (atomic mass unit) was applied to all single-collector Daly analyses, based on analysis of NBS-981 and NBS-982.(d) Corrected for fractionation, spike, and common Pb; all common Pb was assumed to be procedural blank: $^{206}\text{Pb}/^{204}\text{Pb} = 18.60 \pm 0.80\%$; $^{207}\text{Pb}/^{204}\text{Pb} = 15.69 \pm 0.32\%$; $^{208}\text{Pb}/^{204}\text{Pb} = 38.51 \pm 0.74\%$ (all uncertainties 1-sigma).

(e) Errors are 2-sigma, propagated using the algorithms of Schmitz and Schoene (2007) and Crowley et al. (2007).

(f) Calculations are based on the decay constants of Jaffey et al. (1971). $^{206}\text{Pb}/^{238}\text{U}$ and $^{207}\text{Pb}/^{206}\text{Pb}$ ages corrected for initial disequilibrium in $^{230}\text{Th}/^{238}\text{U}$ using Th/U [magma] = 4.

Table DR2. Major oxide data for intrusive rocks from the Cougar Creek Complex and volcanic rocks from the informal Big Canyon Creek unit of the Wild Sheep Creek

	CC-7-9-2	CC-6-8-2	CC-7-17-1	CC-7-11-2	CC-6-7-3	CC-6-3-1	CC-6-3-2	CC-6-4-1	CC-6-16-1	CC-8-3-1	V92-1	V92-2	V92-3
SiO ₂	75.31	51.01	51.49	51.98	53.01	51.58	50.32	69.62	57.47	68.77	73.18	76.49	51.58
TiO ₂	0.33	1.07	1.14	1.12	1.95	1.05	1.42	0.36	0.83	0.41	0.26	0.32	1.14
Al ₂ O ₃	13.01	20.23	18.24	16.92	16.03	16.71	16.34	15.90	17.41	15.67	13.06	12.39	16.78
FeO total	2.57	8.34	10.73	9.11	11.18	9.90	10.03	3.20	6.26	3.61	2.97	2.40	10.32
MnO	0.05	0.17	0.23	0.20	0.31	0.18	0.20	0.08	0.12	0.14	0.05	0.05	0.23
MgO	0.82	4.20	4.57	7.15	4.53	6.45	7.54	1.05	4.44	1.46	0.41	1.00	8.04
CaO	3.94	11.74	10.33	10.44	9.51	11.23	11.04	4.57	11.00	4.48	5.85	2.73	7.46
Na ₂ O	3.81	2.91	2.85	2.62	2.97	2.39	2.74	3.84	2.13	3.98	3.86	3.90	3.67
K ₂ O	0.10	0.22	0.25	0.28	0.04	0.30	0.20	1.24	0.03	1.32	0.03	0.54	0.25
P ₂ O ₅	0.06	0.13	0.19	0.20	0.46	0.19	0.22	0.14	0.25	0.17	0.06	0.05	0.15
Total	100.00	100.03	100.02	100.02	100.00	99.97	100.05	100.00	99.94	100.01	99.73	99.87	99.62
	V92-4	V92-5	V92-6	V92-7	V92-8	V92-9	V92-10	V92-11	V92-12	V92-13	V92-14	V92-15	V92-16B
SiO ₂	70.14	74.18	52.03	51.81	77.16	76.90	50.87	71.87	75.64	52.82	74.10	49.75	59.24
TiO ₂	0.39	0.16	1.00	0.86	0.30	0.17	1.07	0.44	0.43	0.79	0.32	0.83	0.83
Al ₂ O ₃	15.44	15.02	18.50	18.98	12.73	12.09	16.10	14.04	13.03	16.42	13.71	16.93	16.55
FeO total	3.10	1.13	10.30	10.12	1.63	2.93	9.52	3.35	2.26	12.27	2.60	8.94	9.01
MnO	0.12	0.04	0.26	0.23	0.04	0.08	0.19	0.08	0.06	0.25	0.04	0.21	0.22
MgO	1.26	0.37	4.31	4.64	0.60	1.31	6.60	1.36	0.56	4.82	0.73	9.54	3.63
CaO	3.31	2.53	9.37	9.77	1.46	2.88	12.82	2.43	2.78	8.16	3.88	11.22	6.36
Na ₂ O	3.67	5.49	3.40	2.87	4.79	2.89	1.95	6.02	4.71	2.85	4.15	1.76	3.38
K ₂ O	2.03	0.98	0.28	0.20	1.16	0.57	0.18	0.01	0.33	0.94	0.22	0.37	0.17
P ₂ O ₅	0.18	0.04	0.25	0.22	0.06	0.03	0.20	0.10	0.06	0.07	0.07	0.16	0.14
Total	99.64	99.94	99.70	99.70	99.93	99.85	99.50	99.70	99.86	99.39	99.82	99.71	99.53
	V92-17	V92-18	V92-19	V92-20B	V92-21	V92-22	V92-23	V92-24	V92-25	V92-26	V92-27		
SiO ₂	70.07	50.87	51.26	53.48	76.43	47.48	76.85	51.97	77.80	50.13	77.84		
TiO ₂	0.43	0.47	0.56	0.50	0.33	2.36	0.22	0.94	0.22	1.09	0.25		
Al ₂ O ₃	15.07	17.13	13.12	14.90	12.84	16.99	13.12	16.64	12.32	16.50	11.95		
FeO total	4.24	9.04	10.98	6.41	1.64	12.67	1.40	10.35	1.52	10.03	1.75		
MnO	0.07	0.18	0.24	0.19	0.04	0.21	0.03	0.21	0.04	0.19	0.03		
MgO	1.50	7.81	10.00	10.08	0.79	7.23	0.35	5.95	0.49	7.72	0.48		
CaO	4.68	13.41	11.17	11.03	1.63	9.35	2.13	9.92	1.30	10.82	1.55		
Na ₂ O	3.34	0.66	1.34	2.63	5.89	3.26	4.55	2.72	6.13	2.85	5.94		
K ₂ O	0.24	0.03	0.88	0.46	0.25	0.51	1.21	0.69	0.06	0.06	0.04		
P ₂ O ₅	0.11	0.06	0.03	0.14	0.07	0.39	0.05	0.14	0.03	0.18	0.05		
Total	99.75	99.66	99.58	99.82	99.91	100.45	99.91	99.53	99.91	99.57	99.88		

Big Canyon Creek unit

	V1-00A	V5-00	V6-00	V9-00
SiO ₂	51.91	48.75	47.35	49.23
TiO ₂	0.92	1.32	1.29	1.17
Al ₂ O ₃	18.87	18.58	19.41	20.04
FeO total	8.48	11.47	10.51	9.51
MnO	0.16	0.21	0.17	
MgO	5.50	5.46	4.29	4.22
CaO	4.73	8.18	10.81	8.79
Na ₂ O	0.46	0.75	0.70	1.08
K ₂ O	5.81	3.62	2.81	3.90
P ₂ O ₅	0.17	0.13	0.12	0.15
Total	97.02	98.47	97.46	98.26

Table DR2. Continued, Trace element data for intrusive rocks from the Cougar Creek Complex and volcanic rocks from the informal Big Canyon Creek unit of the Wild Sheep Creek Formation.

	Cougar Creek Complex														Big Canoyn Creek unit						
	CC-7-9-2	CC-6-8-2	CC-7-17-1	CC-7-11-2	CC-6-7-3	CC-6-3-1	CC-6-3-2	CC-6-4-1	CC-6-16-1	CC-8-3-1	CC07-02	CC07-04	CC08-01	CC08-03	CC08-04	CC08-05	CC08-06	V1-00A	V5-00	V6-00	V9-00
V	52	362	359	285	214	335	306	37	170	60	475.80	37.87	21.63	14.07	309.10	174.70	27.96	249.00	435.00	424.00	344.00
Sc	12.12	29.15	40.17	39.92	38.75	44.85	42.00	3.73	20.31	5.09	42.07	2.98	2.51	0.86	33.05	20.68	3.05	30.00	47.00	46.00	35.00
Cu	12	20	114	59	25	86	83	5	6	3	127.90	52.59	4.09	31.93	30.37	26.61	255.30	158.00	172.00	182.00	107.00
Zn	29	70	102	80	117	72	76	26	60	29	108.00	27.62	11.33	4.01	87.07	71.80	143.90	95.00	104.00	107.00	91.00
Ni	4	31	3	72	11	41	79	2	51	4	53.60	1.46	1.02	1.42	4.75	3.26	1.80	29.00	34.00	33.00	31.00
Cr	1	70	23	165	42	92	219	1	90	1	69.39	1.69	11.71	1.39	2.68	4.08	2.11	55.00	66.00	66.00	65.00
Cs	2.90	0.76	0.67	0.75	0.62	0.72	0.68	0.71	0.73	1.41	0.44	0.40	0.08	0.08	0.06	0.05	0.40				
Rb	1.32	2.54	2.04	4.63	0.48	4.67	1.89	20.21	0.50	25.33	4.80	1.11	27.46	1.55	5.34	3.59	6.65	6.00	12.00	10.00	16.00
Ba	236.31	67.85	125.16	61.80	21.76	65.98	52.53	463.03	19.67	217.19	101.20	108.60	579.10	554.00	62.09	62.88	516.00	223.00	115.00	144.00	344.00
Th	1.47	0.21	0.15	0.32	0.28	0.35	0.19	1.64	2.16	1.91	0.19	0.57	1.97	1.44	0.03	0.19	2.71	3.00	1.00	3.00	
K	344.61	753.46	861.61	964.87	137.85	1033.77	689.23	4272.96	103.40	4548.82	2710.00	1900.00	20460.00	3640.00	2810.00	1810.00	9060.00	20022.08	12475.03	9683.66	13439.95
U	0.60	0.10	0.07	0.15	0.12	0.19	0.10	0.54	0.76	0.81	0.11	0.29	0.68	0.16	0.01	0.11	0.18				
Ta	0.17	0.10	0.07	0.19	0.25	0.12	0.16	0.21	0.20	0.21	0.06	0.17	0.64	0.01	0.06	0.09	0.13				
Nb	2.13	1.63	1.25	2.49	3.67	1.68	2.25	4.43	3.25	2.62	0.95	2.86	12.31	0.29	1.43	1.64	2.58	2.50	3.10	2.10	2.00
La	7.61	3.00	2.43	5.22	4.96	5.14	5.03	16.48	12.75	16.13	3.39	5.28	12.07	11.36	2.12	4.01	16.05	3.52	3.31	3.57	3.26
Ce	17.28	8.03	6.32	13.60	13.64	12.59	13.83	29.56	26.22	33.66	9.06	10.37	22.16	17.03	7.13	10.58	28.70	8.96	7.92	8.74	7.71
Pb	2.77	1.87	1.87	1.98	3.00	1.76	2.00	2.50	3.30	2.10	1.07	1.48	0.72	1.13	0.39	0.82	14.16				
Pr	2.30	1.32	1.05	1.98	2.19	1.89	2.08	3.13	3.40	4.07	1.53	2.02	3.08	2.28	1.47	1.81	4.20	1.42	1.31	1.41	1.26
Sr	202.17	392.30	356.16	223.77	279.33	273.04	240.88	474.69	574.63	369.35	549.50	235.80	156.50	156.60	432.00	451.00	218.10	589.00	305.00	322.00	489.00
P	56.18	122.08	176.19	194.25	439.02	178.06	207.59	138.07	240.96	161.88	880.00	640.00	520.00	140.00	650.00	1210.00	500.00	160.93	123.80	116.18	140.94
Nd	10.83	7.43	6.07	10.08	12.23	9.70	10.99	11.51	15.13	16.88	8.02	9.38	11.50	7.97	8.78	9.60	16.19	7.63	7.60	7.91	7.34
Sm	3.24	2.51	2.26	3.18	4.27	3.03	3.56	1.85	3.65	3.67	2.61	2.55	2.29	1.19	3.10	2.98	2.98	2.57	3.08	3.04	2.93
Zr	105.45	39.13	21.86	82.96	84.92	55.72	95.28	140.23	71.94	110.04	32.63	156.00	102.80	76.61	23.96	29.70	201.50	56.00	52.00	52.00	62.00
Hf	3.48	1.31	0.82	2.11	2.35	1.61	2.37	3.57	2.03	3.12	1.10	4.07	2.66	2.25	0.96	0.95	4.63				
Eu	0.83	0.93	1.11	1.19	2.02	1.12	1.37	0.88	1.21	1.12	1.04	0.94	0.71	0.67	1.22	1.07	1.07	0.61	1.15	1.14	1.16
Ti	1181.70	3851.66	4077.13	4019.09	7015.33	3778.38	5114.81	1285.81	2963.70	1483.41	8670.00	2850.00	1440.00	690.00	7180.00	4980.00	2200.00	3318.88	4752.03	4619.13	4202.48
Gd	3.87	2.98	2.89	3.83	5.50	3.48	4.32	1.33	3.30	3.25	2.95	2.70	1.97	1.01	3.53	3.29	2.69	2.97	4.05	3.97	3.89
Tb	0.73	0.53	0.53	0.69	0.93	0.60	0.79	0.18	0.50	0.51	0.51	0.45	0.29	0.10	0.62	0.55	0.34	0.53	0.78	0.75	0.74
Dy	4.89	3.44	3.46	4.38	5.79	3.81	4.98	1.00	2.82	3.12	3.33	2.96	1.66	0.45	4.07	3.58	1.92	3.36	5.15	4.98	5.00
Y	30.77	18.88	19.08	24.39	31.16	20.87	27.28	5.72	14.91	19.07	19.45	19.31	10.20	2.58	24.53	22.06	11.95	18.00	29.00	29.00	29.00
Ho	1.10	0.71	0.73	0.94	1.19	0.79	1.05	0.20	0.56	0.66	0.71	0.68	0.35	0.08	0.88	0.79	0.40	0.69	1.12	1.06	1.07
Er	3.29	1.99	2.08	2.57	3.22	2.21	2.92	0.56	1.46	1.91	1.96	1.98	1.02	0.25	2.49	2.20	1.17	1.93	3.15	2.95	2.97
Tm	0.52	0.28	0.30	0.37	0.45	0.32	0.41	0.09	0.21	0.30	0.29	0.33	0.17	0.04	0.38	0.33	0.18				