

Table S1. Major & trace element data for Emperor Seamounts & Mesozoic MORB																			
Seamount							XRF Major Element Analysis												
ODP Sample name																			
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	LOI	Total	
Meiji*	19-192A	5	R	3	98	100	45.12	2.10	13.74	14.30	0.16	7.02	8.63	2.72	1.91	0.22	3.27	99.18	
Meiji*	19-192A	6	R	3	23	35	45.70	2.02	15.06	13.44	0.18	6.12	9.86	2.38	0.86	0.19	1.82	97.66	
Detroit*	197-1203A	17	R	4	57	63	48.47	1.98	16.04	11.07	0.141	5.89	11.77	2.86	0.64	0.24	0.93	100.04	
Detroit*	197-1203A	18	R	3	114	116	47.93	1.94	15.58	11.39	0.155	5.92	11.97	2.81	0.60	0.20	1.10	99.60	
Detroit	197-1203A	32	R	5	40	48	47.88	1.79	15.32	12.16	0.140	7.44	11.19	2.71	0.15	0.16	0.50	99.44	
Detroit*	197-1203A	37	R	2	89	93	45.63	1.17	14.24	11.51	0.144	13.14	9.31	1.89	0.12	0.10	2.15	99.41	
Detroit	197-1203A	40	R	5	104	107	47.82	1.77	16.09	9.65	0.200	6.87	12.33	2.78	0.58	0.20	1.72	100.01	
Detroit*	197-1203A	49	R	3	50	54	46.11	2.17	14.80	13.25	0.185	8.33	9.97	2.61	0.09	0.19	1.32	99.02	
Detroit*	197-1203A	58	R	4	31	34	47.46	1.69	15.42	11.82	0.157	7.76	10.90	2.66	0.26	0.17	1.11	99.40	
Detroit	197-1203A	59	R	2	70	73	47.69	1.68	15.62	11.70	0.140	7.42	11.50	2.66	0.11	0.17	0.71	99.40	
Detroit	197-1203A	26	R	2	6	10	45.93	1.96	15.81	12.19	0.170	9.92	7.86	2.89	0.29	0.21	2.58	99.81	
Detroit	197-1203A	44	R	1	75	78	45.63	2.05	15.00	13.26	0.230	5.74	13.37	2.62	1.43	0.20	0.20	99.73	
Detroit*	197-1203A	53	R	5	123	128	46.10	2.60	15.32	12.32	0.177	6.52	10.82	3.15	0.16	0.48	1.57	99.21	
Detroit*	197-1203A	62	R	3	114	118	45.15	2.82	15.24	10.97	0.211	8.97	7.62	3.32	0.31	0.49	3.41	98.51	
Detroit*	197-1203A	65	R	4	21	25	44.31	3.35	14.39	12.96	0.188	6.51	9.24	2.92	1.33	0.55	4.12	99.88	
Detroit	197-1203A	88	R	2	4	6	41.01	3.15	13.17	14.61	0.140	7.56	8.06	2.76	1.63	0.66	6.02	98.77	
Detroit	197-1204A	7	R	3	32	35	37.11	1.85	13.20	9.35	0.110	3.09	21.21	2.72	0.73	0.32	10.03	99.72	
Detroit*	197-1204A	9	R	2	77	80	44.51	2.10	14.90	13.40	0.160	6.73	10.41	2.96	1.01	0.23	3.61	100.02	
Detroit	197-1204A	10	R	2	110	113	47.10	2.22	16.12	11.78	0.150	8.26	8.54	3.38	0.47	0.28	2.72	101.02	
Detroit	197-1204A	10	R	5	44	48	45.04	2.28	14.92	12.32	0.150	7.51	9.00	3.23	0.66	0.24	3.84	99.19	
Detroit	197-1204B	1	R	4	54	57	41.09	1.91	15.55	11.66	0.150	2.72	15.99	3.01	0.74	0.25	6.12	99.19	
Detroit*	197-1204B	2	R	2	76	80													
Detroit	197-1204B	8	R	1	79	81	44.14	2.11	14.79	12.88	0.180	4.27	12.80	3.11	1.29	0.29	4.27	100.13	
Detroit	197-1204B	10	R	1	10	13	45.62	2.24	15.17	13.09	0.150	7.84	9.27	3.11	0.41	0.26	2.39	99.55	
Detroit	197-1204B	13	R	1	122	126	44.63	2.18	14.69	14.37	0.200	5.64	10.19	3.13	1.07	0.33	2.71	99.14	
Detroit	197-1204B	14	R	2	4	7	43.96	2.12	14.84	12.13	0.160	7.56	10.15	2.95	0.74	0.23	4.06	98.90	
Detroit	197-1204B	15	R	1	132	135	43.29	2.28	16.13	14.83	0.170	3.54	10.12	3.31	1.25	0.55	3.58	99.05	
Suiko*	55-433C	31	R	4	46		47.75	2.05	15.32	11.66	0.12	7.68	10.35	2.87	0.29	0.21	0.90	99.21	
Suiko*	55-433C	23	R	3	59		44.86	2.14	12.76	12.84	0.16	11.95	8.35	2.15	0.17	0.21	3.16	98.74	
Suiko	55-433A	31	R	4	46	50	45.61	3.34	14.78	15.69	0.16	4.47	8.11	3.76	1.13	0.45	1.15	98.66	
Nintoku	197-1205A	6	R	2	84	86	44.85	2.52	17.07	10.28	0.230	5.19	9.36	3.84	1.44	0.54	3.60	98.92	
Nintoku*	197-1205A	8	R	1	5	7	46.38	2.98	15.92	14.19	0.188	5.32	8.38	3.91	1.21	0.50	0.27	99.23	
Nintoku	197-1205A	13	R	2	90	92	45.51	3.05	15.72	14.20	0.200	5.54	8.20	3.94	1.33	0.48	1.02	99.19	
Nintoku*	197-1205A	18	R	5	63	65	45.77	2.43	17.05	12.97	0.163	6.27	9.09	3.19	0.86	0.37	1.46	99.62	
Nintoku	197-1205A	20	R	7	100	103	39.31	2.87	14.11	15.90	0.190	4.11	5.87	2.96	1.03	0.37	2.79	89.51	
Nintoku	197-1205A	21	R	3	75	78	45.36	2.62	15.11	14.19	0.180	6.31	9.18	3.22	0.79	0.32	1.62	98.90	
Nintoku	197-1205A	26	R	2	28	30	45.37	2.63	15.27	14.04	0.190	6.58	9.22	3.12	0.77	0.30	1.53	99.02	
Nintoku	197-1205A	28	R	4	2	4	45.72	2.14	14.73	14.86	0.210	6.84	8.88	3.12	0.50	0.22	1.78	99.00	
Nintoku	197-1205A	32	R	2	117	119	45.18	1.94	15.98	13.03	0.160	6.75	9.25	3.12	0.55	0.22	2.89	99.07	
Nintoku	197-1205A	33	R	4	81	84	42.20	2.38	15.92	15.12	0.440	7.58	6.47	2.34	0.85	0.35	5.32	98.97	
Nintoku*	197-1205A	35	R	2	29	31	46.43	1.47	15.29	12.21	0.154	8.72	9.78	2.50	0.16	0.13	2.39	99.25	
Nintoku	197-1205A	37	R	12	18	19	44.72	2.48	13.47	14.37	0.180	9.42	8.61	2.85	0.70	0.34	1.66	98.80	
Nintoku	197-1205A	41	R	3	24	26	45.92	2.73	15.09	14.71	0.190	6.20	8.46	3.23	0.78	0.39	1.62	99.32	
Nintoku	197-1205A	41	R	5	62	65	45.81	2.77	15.57	14.58	0.140	5.80	8.43	3.33	0.70	0.32	1.74	99.19	
Nintoku	197-1205A	43	R	4	43	45	45.65	2.67	15.40	14.81	0.180	5.55	8.67	3.34	0.74	0.34	1.69	99.04	
Nintoku	197-1205A	44	R	2	23	26	43.94	3.21	15.60	15.64	0.240	4.95	7.98	3.23	0.87	0.41	1.86	97.93	
Nintoku	197-1205A	44	R	2	105	108	49.88	2.19	16.19	9.71	0.230	5.74	5.19	4.38	2.62	0.60	2.58	99.31	
Nintoku*	197-1205A	45	R	1	98	100	44.05	3.32	15.94	16.08	0.190	5.09	7.39	3.16	0.90	0.40	2.16	98.68	
Ojin*	55-430A	5	R	4	88		48.12	3.11	15.71	12.42	0.13	4.33	6.89	4.42	1.65	1.23	1.15	99.16	
Ojin*	55-430A	5	R	3	56	58	47.94	3.05	15.94	12.27	0.10	3.87	6.88	4.65	1.83	1.28	0.95	98.77	

Seamount							XRF Major Element Analysis													
ODP Sample name																				
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	LOI	Total		
Koko	197-1206A	3	R	2	103	106	48.80	2.45	14.01	12.74	0.128	7.76	8.93	3.16	0.27	0.31	0.79	99.35		
Koko	197-1206A	3	R	2	103	106														
Koko	197-1206A	4	R	3	34	37	48.98	2.34	14.23	12.23	0.140	7.46	9.53	3.20	0.26	0.29	0.64	99.30		
Koko	197-1206A	7	R	4	61	63	49.29	2.21	13.90	11.59	0.11	8.34	8.80	2.79	0.45	0.21	0.87	98.56		
Koko	197-1206A	9	R	1	7	9	48.64	2.23	14.88	11.68	0.12	7.28	10.38	2.94	0.36	0.21	0.62	99.34		
Koko	197-1206A	9	R	2	145	147	44.22	1.96	10.14	13.54	0.178	17.62	7.01	1.36	0.15	0.18	2.78	99.13		
Koko	197-1206A	11	R	1	9	14	44.61	1.92	10.06	13.28	0.180	17.23	6.94	1.40	0.15	0.18	3.12	99.07		
Koko	197-1206A	14	R	1	100	104	44.47	1.83	10.29	13.20	0.168	16.51	7.01	1.36	0.18	0.18	3.38	98.59		
Koko	197-1206A	15	R	1	10	13	48.30	2.45	13.68	12.74	0.164	8.04	10.76	2.44	0.31	0.26	-0.11	99.04		
Koko	197-1206A	15	R	4	50	53	47.26	2.46	13.99	12.36	0.160	7.50	11.52	2.56	0.34	0.26	0.80	99.21		
Koko	197-1206A	16	R	2	59	61	44.81	2.65	13.81	13.04	0.154	7.04	11.89	2.62	0.42	0.30	2.93	99.67		
Koko	197-1206A	18	R	1	58	61	45.01	1.81	9.81	12.90	0.160	18.21	7.31	1.50	0.18	0.19	2.06	99.14		
Koko	197-1206A	19	R	3	76	79	48.16	2.69	13.86	12.88	0.160	7.44	10.81	2.57	0.31	0.29	0.01	99.18		
Koko	197-1206A	20	R	3	115	118	48.48	2.64	14.11	12.78	0.160	7.40	10.92	2.57	0.28	0.29	-0.18	99.45		
Koko	197-1206A	21	R	5	49	53	47.14	3.10	15.67	10.29	0.280	8.00	8.11	3.42	0.50	0.85	2.34	99.70		
Koko	197-1206A	22	R	3	13	17	46.68	2.84	15.13	10.81	0.279	6.71	10.70	2.90	0.84	0.34	2.41	99.65		
Koko	197-1206A	24	R	1	18	21	49.69	2.43	14.16	12.80	0.180	6.83	10.77	2.62	0.26	0.25	-0.22	99.77		
Koko	197-1206A	24	R	3	6	9	48.55	2.45	14.13	13.18	0.150	6.71	10.56	2.64	0.32	0.26	-0.07	98.88		
Koko	197-1206A	25	R	1	35	39	48.23	2.72	14.50	13.08	0.160	6.54	10.91	2.79	0.37	0.28	-0.30	99.28		
Koko	197-1206A	26	R	1	41	44	47.49	2.46	13.31	13.12	0.210	8.69	8.15	2.98	0.66	0.48	1.78	99.33		
Koko	197-1206A	29	R	1	31	38	47.95	2.96	14.93	12.26	0.187	6.19	9.69	2.82	0.83	0.36	0.94	99.12		
Koko	197-1206A	29	R	1	87	90	47.52	2.74	14.28	12.62	0.180	7.23	10.34	2.74	0.33	0.30	0.30	98.58		
Koko	197-1206A	30	R	2	1	4	47.23	2.79	14.16	12.63	0.257	6.60	11.10	2.72	0.51	0.30	0.90	99.20		
Koko	197-1206A	31	R	1	110	113	49.19	2.27	14.01	12.17	0.160	7.42	11.13	2.48	0.28	0.24	0.03	99.38		
Koko	197-1206A	33	R	1	48	52	48.28	2.57	15.44	10.01	0.200	8.44	9.42	2.90	0.36	0.28	1.92	99.82		
Koko	197-1206A	38	R	1	68	72	46.34	1.81	9.92	12.96	0.171	17.08	7.46	1.76	0.24	0.19	0.61	98.55		
Koko	197-1206A	39	R	3	90	94	46.72	1.91	10.08	13.10	0.180	16.86	7.54	1.79	0.25	0.20	0.48	99.11		
Koko	197-1206A	41	R	1	4	7	48.57	2.64	14.33	12.76	0.168	6.70	10.53	2.78	0.55	0.31	0.06	99.40		
Koko	197-1206A	42	R	3	33	37	49.63	2.39	14.01	12.67	0.150	7.19	10.54	2.61	0.27	0.25	-0.05	99.66		
Koko	197-1206A	45	R	1	62	68	48.44	2.39	14.34	12.73	0.170	7.36	10.82	2.60	0.30	0.26	-0.25	99.16		
MORB	16-153	29	R	4	92	96	47.13	2.05	13.77	12.53	0.09	14.50	2.98	2.92	0.73	0.13	1.42	98.23		
MORB	91-595A	10	R	1	103	107	50.78	1.64	15.32	9.08	0.15	6.89	12.59	2.95	0.23	0.14	0.51	100.28		
MORB	91-595B	7	R	2	80	82	48.27	1.76	14.37	11.79	0.24	6.58	10.69	2.91	0.65	0.15	0.67	98.07		
Major and trace element concentration data for Emperor seamounts and Mesozoic MORBs; major elements reported in wt. %; trace elements in ppm.																				
Sample names in bold font (and with an asterisk) have also been analysed for isotopes (Table S2). Trace elements followed by "(X)" were analyzed by XRF.																				
All other trace elements analyzed by ICP-MS. See Text S1 for analytical details.																				

Table S1. Major & trace element data for Emperor Seamounts & Mesozoic MORB																		
Seamount							XRF Trace Element Analyses											
ODP Sample name																		
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	Nb(X)	Zr(X)	Y(X)	Sr(X)	Rb(X)	Ba(X)	Zn(X)	Cu(X)	Ni(X)	Co(X)	Cr(X)	Sc(X)
Meiji*	19-192A	5	R	3	98	100	9.7	142.0	34.8	208.4	16.5	75.4	89.3	200.7	61.6	57.6	160.1	35.3
Meiji*	19-192A	6	R	3	23	35	10.6	153.4	34.1	202.6	27.0	42.7	118.2	507.5	47.1	56.1	106.3	45.7
Detroit*	197-1203A	17	R	4	57	63	8.7	130.6	31.0	258.9	9.1	50.2	112.2	131.3	121.2	47.0	651.4	40.5
Detroit*	197-1203A	18	R	3	114	116	9.0	131.0	30.7	256.8	10.7	48.9	92.3	140.4	81.3	49.5	281.3	37.7
Detroit	197-1203A	32	R	5	40	48	5.7	108.0	24.2	245.0	2.5	38.1	85.3	124.1	73.0	48.2	538.0	37.4
Detroit*	197-1203A	37	R	2	89	93	3.7	71.1	20.0	162.0	2.1	21.8	83.4	92.1	394.2	52.4	1058.7	29.6
Detroit	197-1203A	40	R	5	104	107	8.0	121.0	28.0	264.0	7.1	33.5	95.5	94.3	154.0	48.4	289.0	37.8
Detroit*	197-1203A	49	R	3	50	54	7.6	128.1	33.2	210.0	1.7	40.1	94.4	85.7	119.5	53.0	572.3	35.0
Detroit*	197-1203A	58	R	4	31	34	6.1	110.5	27.6	237.4	4.8	51.4	80.3	108.9	111.6	48.1	275.6	33.2
Detroit	197-1203A	59	R	2	70	73	5.9	117.0	27.7	247.0	1.3	38.5	84.4	101.1	111.0	48.3	274.0	32.4
Detroit	197-1203A	26	R	2	6	10	9.4	133.0	29.1	234.0	3.0	72.6	81.0	51.9	138.0	50.4	425.0	31.8
Detroit	197-1203A	44	R	1	75	78	7.6	124.0	30.4	217.0	21.2	43.1	96.7	80.0	93.0	50.4	268.0	35.9
Detroit*	197-1203A	53	R	5	123	128	14.1	235.0	47.1	251.8	2.2	56.6	120.4	68.6	93.3	50.3	269.2	40.2
Detroit*	197-1203A	62	R	3	114	118	15.8	240.1	45.1	239.2	1.6	68.0	111.3	58.4	114.1	49.3	172.9	44.2
Detroit*	197-1203A	65	R	4	21	25	15.6	211.6	45.4	247.9	10.9		134.0		33.7			
Detroit	197-1203A	88	R	2	4	6	14.2	194.0	46.2	217.0	21.7		129.2		31.0			
Detroit	197-1204A	7	R	3	32	35	8.4	150.0	35.1	238.0	9.6	58.5	87.2		15.0	34.8	112.0	37.1
Detroit*	197-1204A	9	R	2	77	80	21.3	161.1	30.8	357.1	12.1	227.6	120.3		27.4	55.0	121.0	27.1
Detroit	197-1204A	10	R	2	110	113	10.9	174.0	38.6	214.0	5.5	85.8	94.3		36.0	50.1	166.0	40.3
Detroit	197-1204A	10	R	5	44	48	8.6	157.0	36.7	206.0	20.0		74.3		28.0			
Detroit	197-1204B	1	R	4	54	57	8.2	152.0	34.9	355.0	14.8		87.0		26.0			
Detroit*	197-1204B	2	R	2	76	80	8.8	151.5	37.3	320.1	12.0		87.9		26.1			
Detroit	197-1204B	8	R	1	79	81	9.6	169.0	36.9	244.0	40.8		122.8		30.0			
Detroit	197-1204B	10	R	1	10	13	10.0	156.0	37.3	211.0	3.7		86.0		37.0			
Detroit	197-1204B	13	R	1	122	126	11.9	188.0	43.7	217.0	47.1		110.0		30.0			
Detroit	197-1204B	14	R	2	4	7	7.9	147.0	24.5	200.0	10.9		75.2		35.0			
Detroit	197-1204B	15	R	1	132	135	10.2	170.0	40.9	277.0	27.0		161.4		34.0			
Suiko*	55-433C	31	R	4	46		10.7	130.7	26.4	283.2	1.8	68.8	100.3	95.6	106.5	48.7	327.9	33.4
Suiko*	55-433C	23	R	3	59		7.2	103.3	22.9	179.1	1.7	48.6	98.2	101.2	469.5	57.1	742.6	31.3
Suiko	55-433A	31	R	4	46	50	29.5	241.5	35.8	446.6	19.8	235.3	121.0	75.0	40.4	57.5	47.2	32.4
Nintoku	197-1205A	6	R	2	84	86	35.4	182.0	23.6	754.0	17.8	381.6	102.3	49.7	62.0	43.5	194.0	20.5
Nintoku*	197-1205A	8	R	1	5	7	41.1	214.2	29.5	540.0	22.1	403.5	119.9		20.4	51.5	83.6	20.7
Nintoku	197-1205A	13	R	2	90	92	39.2	214.0	29.6	556.0	23.3	391.2	124.2	40.0	56.0	52.1	90.0	19.4
Nintoku*	197-1205A	18	R	5	63	65	26.3	157.3	24.1	497.5	14.8	278.4	92.9		24.1	48.8	137.1	21.6
Nintoku	197-1205A	20	R	7	100	103	30.3	180.0	31.3	318.0	19.5	267.8	131.6	51	44.0	64.4	142.0	29.4
Nintoku	197-1205A	21	R	3	75	78	24.1	147.0	27.1	388.0	13.2	212.7	112.7	64.5	69.0	56.8	108.0	25.7
Nintoku	197-1205A	26	R	2	28	30	23.9	148.0	26.3	408.0	12.9	258.1	106.1		30.0	55.3	245.0	21.0
Nintoku	197-1205A	28	R	4	2	4	15.8	110.0	25.3	284.0	8.3	158.0	108.3		24.0	59.8	214.0	24.9
Nintoku	197-1205A	32	R	2	117	119	16.5	107.0	21.3	750.0	8.8	161.1	103.1	60.2	99.0	54.1	197.0	24.8
Nintoku	197-1205A	33	R	4	81	84	23.7	162.0	30.7	250.0	13.3	216.8	111.7		75.0	63.6	262.0	20.9
Nintoku*	197-1205A	35	R	2	29	31	7.2	72.7	18.0	287.2	1.2	68.7	87.3		57.8	51.4	445.3	25.0
Nintoku	197-1205A	37	R	12	18	19	24.2	150.0	25.0	418.0	11.9	215.9	119.3	77.2	256.0	61.8	330.0	22.9
Nintoku	197-1205A	41	R	3	24	26	24.9	174.0	31.6	349.0	13.9	255.7	115.3		30.0	56.3	70.0	22.3
Nintoku	197-1205A	41	R	5	62	65	20.9	157.0	30.2	345.0	11.6	225.5	119.6		28.0	56.1	142.0	25.0
Nintoku	197-1205A	43	R	4	43	45	21.3	165.0	31.5	351.0	14.1	217.0	121.1		27.0	58.4	85.0	26.3
Nintoku	197-1205A	44	R	2	23	26	27.3	210.0	36.9	355.0	13.5	232.4	137.4	47.5	63.0	63.0	67.0	24.3
Nintoku	197-1205A	44	R	2	105	108	26.6	202.0	35.4	347.0	13.0	234.6	134.9	46.0	68.0	64.8	138.0	27.5
Nintoku*	197-1205A	45	R	1	98	100	24.3	194.1	33.9	352.7	17.0	279.3	120.7		23.2	60.1	96.8	27.6
Ojin*	55-430A	5	R	4	88		43.8	490.3	58.5	673.1	27.0	353.7	158.0	22.2	11.7	44.1	24.0	17.0
Ojin*	55-430A	5	R	3	56	58	46.3	515.4	59.7	702.2	24.0	371.1	163.0	22.2	12.3	44.3	78.6	18.1

Seamount							XRF Trace Element Analyses											
ODP Sample name																		
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	Nb(X)	Zr(X)	Y(X)	Sr(X)	Rb(X)	Ba(X)	Zn(X)	Cu(X)	Ni(X)	Co(X)	Cr(X)	Sc(X)
Koko	197-1206A	3	R	2	103	106	16.7	174.1	32.8	294.8	2.2		109.1		64.5			
Koko	197-1206A	3	R	2	103	106												
Koko	197-1206A	4	R	3	34	37	16.6	168.0	30.7	306.0	3.0		102.5		65.0			
Koko	197-1206A	7	R	4	61	63	7.8	127.0	26.7	257.0	4.0		100.5		52.0			
Koko	197-1206A	9	R	1	7	9	8.0	131.0	30.0	283.0	3.9		99.5		45.0			
Koko	197-1206A	9	R	2	145	147	8.5	109.6	20.6	184.5	2.1		103.0		255.0			
Koko	197-1206A	11	R	1	9	14	7.9	115.0	20.9	183.0	2.7		100.2		247.0			
Koko	197-1206A	14	R	1	100	104	8.1	106.8	20.4	178.3	2.5	48.9	109.9	50.9	776.5	66.2	1209.0	26.0
Koko	197-1206A	15	R	1	10	13	13.0	160.3	28.1	343.6	5.1	84.6	106.6	87.9	145.4	50.3	324.2	35.9
Koko	197-1206A	15	R	4	50	53	12.7	166.0	28.0	347.0	3.1	88.0	109.4	84.9	140.0	51.4	315.0	34.9
Koko	197-1206A	16	R	2	59	61	13.9	177.4	32.7	356.2	7.6	63.2	114.1	52.1	129.5	53.7	386.2	34.1
Koko	197-1206A	18	R	1	58	61	8.8	118.0	19.0	221.0	2.9	49.2	105.6	66.6	912.0	67.3	985.0	28.8
Koko	197-1206A	19	R	3	76	79	14.3	184.0	29.8	372.0	2.7	79.8	113.7	80.9	116.0	52.4	287.0	35.3
Koko	197-1206A	20	R	3	115	118	13.4	182.0	30.4	355.0	2.8	74.1	111.6	60.7	96.0	50.1	276.0	35.6
Koko	197-1206A	21	R	5	49	53	15.9	204.0	41.7	379.0	4.6	64.2	154.6	111.9	92.0	46.0	283.0	41.1
Koko	197-1206A	22	R	3	13	17	15.4	194.1	34.7	361.2	8.5	51.2	126.5	85.3	91.3	45.2	322.2	40.5
Koko	197-1206A	24	R	1	18	21	11.4	153.0	29.8	315.0	4.5	78.0	109.5	85.3	74.0	50.4	245.0	34.3
Koko	197-1206A	24	R	3	6	9	13.3	169.0	32.0	323.0	5.3	69.2	102.7		26.0	49.0	248.0	34.7
Koko	197-1206A	25	R	1	35	39	13.6	178.0	32.9	331.0	3.8	61.6	113.3		28.0	49.6	220.0	36.3
Koko	197-1206A	26	R	1	41	44	11.8	154.0	36.2	263.0	8.5		129.6		31.0			
Koko	197-1206A	29	R	1	31	38	14.8	193.9	39.4	333.3	8.2		145.8		32.0			
Koko	197-1206A	29	R	1	87	90	15.0	189.0	33.2	341.0	4.4		117.2		36.0			
Koko	197-1206A	30	R	2	1	4	14.4	185.0	32.0	428.8	9.0		117.3		35.5			
Koko	197-1206A	31	R	1	110	113	13.5	161.0	28.3	341.0	4.3		95.5		43.0			
Koko	197-1206A	33	R	1	48	52	14.4	169.0	28.0	353.0	2.8		108.0		42.0			
Koko	197-1206A	38	R	1	68	72	8.7	117.8	23.0	210.4	1.7	76.6	99.5		269.3	63.6	934.4	29.7
Koko	197-1206A	39	R	3	90	94	9.3	122.0	24.6	221.0	3.2	75.9	101.2		262.0	64.0	951.0	28.4
Koko	197-1206A	41	R	1	4	7	17.2	188.6	34.6	342.0	4.3	69.1	107.6		32.6	49.0	199.4	34.9
Koko	197-1206A	42	R	3	33	37	12.3	154.0	28.8	315.0	3.4	79.0	108.8		30.0	49.2	266.0	34.9
Koko	197-1206A	45	R	1	62	68	14.1	163.0	31.0	324.0	3.8	89.8	108.8		30.0	51.5	269.0	37.1
MORB	16-153	29	R	4	92	96	2.1	67.7	31.6	79.8	1.5	17.0	70.8	83.5	131.2	46.9	435.8	41.8
MORB	91-595A	10	R	1	103	107	3.2	98.7	39.3	116.2	3.7	11.2	82.7	58.7	67.5	38.7	234.4	42.6
MORB	91-595B	7	R	2	80	82	3.0	119.7	43.2	120.7	14.1	16.2	104.7	55.8	58.8	50.3	172.1	49.9
Major and trace element concentration data for Emperor																		
Sample names in bold font (and with an asterisk) have a																		
All other trace elements analyzed by ICP-MS. See Text																		

Table S1. Major & trace element data for Emperor Seamounts & Mesozoic MORB																	
Seamount							ODP Sample name										
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	V(X)	Zr	Nb	Y	Ta	Hf	Sr	Rb	Ba	La	Ce
Meiji*	19-192A	5	R	3	98	100	405.2	135.0	8.41	32.6	0.61	3.16	179.0	14.80	72.6	7.65	19.95
Meiji*	19-192A	6	R	3	23	35	363.3	125.9	6.33	30.4	0.36	3.13	182.9	26.97	47.1	7.50	21.21
Detroit*	197-1203A	17	R	4	57	63	294.4	124.5	9.09	29.7	0.51	2.98	239.1	9.63	36.7	7.67	19.71
Detroit*	197-1203A	18	R	3	114	116	296.6	117.4	7.69	28.5	0.65	2.80	226.6	9.12	35.6	7.28	18.50
Detroit	197-1203A	32	R	5	40	48	312.2										
Detroit*	197-1203A	37	R	2	89	93	210.6	67.2	3.64	19.7	0.24	1.69	155.0	1.26	17.1	3.36	9.37
Detroit	197-1203A	40	R	5	104	107	295.6										
Detroit*	197-1203A	49	R	3	50	54	330.9	117.9	7.85	31.5	0.45	2.92	189.9	0.27	25.6	6.60	17.79
Detroit*	197-1203A	58	R	4	31	34	273.4	97.7	6.18	25.4	0.40	2.41	208.6	2.87	40.2	5.51	14.76
Detroit	197-1203A	59	R	2	70	73	286.5										
Detroit	197-1203A	26	R	2	6	10	266.9										
Detroit	197-1203A	44	R	1	75	78	328.8										
Detroit*	197-1203A	53	R	5	123	128	355.1	228.9	16.14	47.0	0.91	5.06	233.4	0.41	43.0	13.73	36.46
Detroit*	197-1203A	62	R	3	114	118	353.2	222.9	14.30	42.3	1.02	4.74	209.3	0.75	34.5	12.95	33.62
Detroit*	197-1203A	65	R	4	21	25		198.5	16.36	43.5	0.92	4.56	229.4	9.26	58.2	13.44	35.35
Detroit	197-1203A	88	R	2	4	6											
Detroit	197-1204A	7	R	3	32	35	335.7										
Detroit*	197-1204A	9	R	2	77	80	294.4	131.2	7.80	31.6	0.57	3.01	174.4	23.28	58.5	7.23	18.85
Detroit	197-1204A	10	R	2	110	113	351.7										
Detroit	197-1204A	10	R	5	44	48											
Detroit	197-1204B	1	R	4	54	57											
Detroit*	197-1204B	2	R	2	76	80		138.4	8.30	33.9	0.60	3.21	280.6	9.66	53.6	7.85	20.20
Detroit	197-1204B	8	R	1	79	81											
Detroit	197-1204B	10	R	1	10	13											
Detroit	197-1204B	13	R	1	122	126											
Detroit	197-1204B	14	R	2	4	7											
Detroit	197-1204B	15	R	1	132	135											
Suiko*	55-433C	31	R	4	46		266.9	97.5	7.37	13.6	0.52	2.33	141.7	6.38	27.5	4.98	11.68
Suiko*	55-433C	23	R	3	59		237.7	95.0	6.39	21.8	0.46	2.29	163.8	1.56	27.3	5.46	14.01
Suiko	55-433A	31	R	4	46	50	360.0	225.1	26.76	32.6	1.68	5.38	404.6	20.21	242.4	21.60	50.72
Nintoku	197-1205A	6	R	2	84	86	230.9										
Nintoku*	197-1205A	8	R	1	5	7	236.0	194.8	41.85	27.0	2.15	4.44	467.7	19.37	345.2	24.96	52.81
Nintoku	197-1205A	13	R	2	90	92	213.5										
Nintoku*	197-1205A	18	R	5	63	65	272.1	148.2	23.72	23.0	1.65	3.31	428.7	12.09	239.9	17.36	37.46
Nintoku	197-1205A	20	R	7	100	103	278.5										
Nintoku	197-1205A	21	R	3	75	78	306.2										
Nintoku	197-1205A	26	R	2	28	30	346.4										
Nintoku	197-1205A	28	R	4	2	4	327.0										
Nintoku	197-1205A	32	R	2	117	119	265.1										
Nintoku	197-1205A	33	R	4	81	84	259.0										
Nintoku*	197-1205A	35	R	2	29	31	223.0	66.6	8.52	18.0	0.44	1.68	263.0	0.52	64.9	6.31	14.53
Nintoku	197-1205A	37	R	12	18	19	283.6										
Nintoku	197-1205A	41	R	3	24	26	303.7										
Nintoku	197-1205A	41	R	5	62	65	294.9										
Nintoku	197-1205A	43	R	4	43	45	313.8										
Nintoku	197-1205A	44	R	2	23	26	332.4										
Nintoku	197-1205A	44	R	2	105	108	314.5										
Nintoku*	197-1205A	45	R	1	98	100	319.3	184.0	23.85	32.3	1.65	4.27	299.2	13.93	207.1	17.38	39.01
Ojin*	55-430A	5	R	4	88		168.3	479.2	45.32	57.0	2.68	10.66	634.9	30.24	361.6	40.16	94.80
Ojin*	55-430A	5	R	3	56	58	152.7	452.6	42.69	54.8	2.75	9.88	589.7	24.05	325.2	37.32	87.96

Seamount							ODP Sample name												
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	V(X)		Zr	Nb	Y	Ta	Hf	Sr	Rb	Ba	La	Ce	
Koko	197-1206A	3	R	2	103	106			163.3	17.74	31.1	0.94	3.88	267.0	2.05	77.6	12.67	31.04	
Koko	197-1206A	3	R	2	103	106			157.3	15.48	30.2	0.98	3.92	264.2	2.58	78.7	13.06	32.31	
Koko	197-1206A	4	R	3	34	37													
Koko	197-1206A	7	R	4	61	63													
Koko	197-1206A	9	R	1	7	9													
Koko	197-1206A	9	R	2	145	147			96.1	8.21	18.5	0.46	2.32	158.0	1.19	26.6	6.40	16.23	
Koko	197-1206A	11	R	1	9	14													
Koko	197-1206A	14	R	1	100	104	214.8		98.2	8.45	18.6	0.52	2.40	162.1	1.47	36.3	6.35	16.38	
Koko	197-1206A	15	R	1	10	13	311.8		151.4	13.42	27.2	0.72	3.59	318.8	3.01	73.5	10.05	26.02	
Koko	197-1206A	15	R	4	50	53	320.1												
Koko	197-1206A	16	R	2	59	61	334.5		156.9	13.35	29.4	0.74	3.75	303.8	6.33	45.9	11.61	29.23	
Koko	197-1206A	18	R	1	58	61	210.5												
Koko	197-1206A	19	R	3	76	79	333.4												
Koko	197-1206A	20	R	3	115	118	321.8												
Koko	197-1206A	21	R	5	49	53	381.1												
Koko	197-1206A	22	R	3	13	17	359.6												
Koko	197-1206A	24	R	1	18	21	305.7												
Koko	197-1206A	24	R	3	6	9	314.7												
Koko	197-1206A	25	R	1	35	39	360.9												
Koko	197-1206A	26	R	1	41	44													
Koko	197-1206A	29	R	1	31	38													
Koko	197-1206A	29	R	1	87	90													
Koko	197-1206A	30	R	2	1	4			167.3	12.27	31.7	0.76	4.20	398.2	6.83	45.3	11.63	30.21	
Koko	197-1206A	31	R	1	110	113													
Koko	197-1206A	33	R	1	48	52													
Koko	197-1206A	38	R	1	68	72	229.5		111.9	9.81	21.9	0.53	2.71	197.9	1.80	57.0	7.73	19.50	
Koko	197-1206A	39	R	3	90	94	225.6												
Koko	197-1206A	41	R	1	4	7	340.4		177.3	17.09	32.3	0.92	4.26	312.6	2.85	51.9	12.65	32.52	
Koko	197-1206A	42	R	3	33	37	320.8												
Koko	197-1206A	45	R	1	62	68	329.8												
MORB	16-153	29	R	4	92	96	295.6		61.1	1.13	29.4	0.09	1.64	72.9	1.11	4.1	1.56	5.40	
MORB	91-595A	10	R	1	103	107	348.7		88.8	2.0	37.1	0.12	2.39	109.5	3.94	7.7	2.9	9.6	
MORB	91-595B	7	R	2	80	82	390.0		110.2	2.9	40.0	0.17	2.82	116.8	13.64	14.8	3.9	12.2	
Major and trace element concentration data for Emperor																			
Sample names in bold font (and with an asterisk) have a																			
All other trace elements analyzed by ICP-MS. See Text																			

Table S1. Major & trace element data for Emperor Seamounts & Mesozoic MORB																		
							ICPMS Trace Elements											
Seamount		ODP Sample name																
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	Nd	Sm	Eu	Gd	Tb	Dy	Pr	Ho	Er	Yb	Lu	Cs
Meiji*	19-192A	5	R	3	98	100	13.87	4.16	1.43	4.81	0.87	5.26	2.92	1.10	3.19	2.95	0.44	0.12
Meiji*	19-192A	6	R	3	23	35	14.56	4.21	1.42	5.11	0.90	5.41	2.88	1.22	3.16	2.93	0.45	1.19
Detroit*	197-1203A	17	R	4	57	63	14.36	4.09	1.51	4.84	0.87	5.01	2.98	1.04	2.84	2.55	0.38	0.52
Detroit*	197-1203A	18	R	3	114	116	13.06	3.95	1.39	4.54	0.80	4.75	2.72	0.97	2.76	2.43	0.35	0.38
Detroit	197-1203A	32	R	5	40	48												
Detroit*	197-1203A	37	R	2	89	93	7.84	2.45	0.96	3.04	0.55	3.30	1.51	0.71	1.93	1.73	0.26	0.02
Detroit	197-1203A	40	R	5	104	107												
Detroit*	197-1203A	49	R	3	50	54	13.72	4.03	1.51	4.82	0.87	5.15	2.78	1.10	3.03	2.76	0.41	0.00
Detroit*	197-1203A	58	R	4	31	34	11.36	3.38	1.27	4.00	0.71	4.26	2.31	0.88	2.41	2.20	0.33	0.02
Detroit	197-1203A	59	R	2	70	73												
Detroit	197-1203A	26	R	2	6	10												
Detroit	197-1203A	44	R	1	75	78												
Detroit*	197-1203A	53	R	5	123	128	26.06	6.96	2.40	7.98	1.35	7.77	5.48	1.61	4.38	3.84	0.58	0.00
Detroit*	197-1203A	62	R	3	114	118	23.16	6.48	2.15	7.15	1.22	7.08	4.86	1.44	4.05	3.58	0.53	0.00
Detroit*	197-1203A	65	R	4	21	25	25.17	6.77	2.41	7.64	1.30	7.50	5.30	1.54	4.08	3.60	0.54	0.07
Detroit	197-1203A	88	R	2	4	6												
Detroit	197-1204A	7	R	3	32	35												
Detroit*	197-1204A	9	R	2	77	80	13.93	4.23	1.50	4.83	0.86	5.14	2.83	1.07	3.04	2.77	0.41	1.61
Detroit	197-1204A	10	R	2	110	113												
Detroit	197-1204A	10	R	5	44	48												
Detroit	197-1204B	1	R	4	54	57												
Detroit*	197-1204B	2	R	2	76	80	14.99	4.50	1.59	5.17	0.92	5.43	3.05	1.14	3.27	2.97	0.44	0.19
Detroit	197-1204B	8	R	1	79	81												
Detroit	197-1204B	10	R	1	10	13												
Detroit	197-1204B	13	R	1	122	126												
Detroit	197-1204B	14	R	2	4	7												
Detroit	197-1204B	15	R	1	132	135												
Suiko*	55-433C	31	R	4	46		9.78	2.95	1.06	2.98	0.50	2.72	2.03	0.51	1.33	1.13	0.15	0.11
Suiko*	55-433C	23	R	3	59		10.40	3.31	1.23	3.80	0.66	3.81	2.08	0.75	2.03	1.69	0.24	0.03
Suiko	55-433A	31	R	4	46	50	29.30	7.25	2.35	7.58	1.19	6.51	6.36	1.31	3.13	2.52	0.37	0.16
Nintoku	197-1205A	6	R	2	84	86												
Nintoku*	197-1205A	8	R	1	5	7	28.08	6.22	2.17	6.14	0.96	5.06	6.76	0.96	2.40	1.95	0.28	0.14
Nintoku	197-1205A	13	R	2	90	92												
Nintoku*	197-1205A	18	R	5	63	65	20.04	4.99	1.73	5.01	0.78	4.22	4.70	0.79	2.06	1.62	0.23	0.08
Nintoku	197-1205A	20	R	7	100	103												
Nintoku	197-1205A	21	R	3	75	78												
Nintoku	197-1205A	26	R	2	28	30												
Nintoku	197-1205A	28	R	4	2	4												
Nintoku	197-1205A	32	R	2	117	119												
Nintoku	197-1205A	33	R	4	81	84												
Nintoku*	197-1205A	35	R	2	29	31	9.40	2.62	1.06	3.16	0.55	3.15	2.05	0.64	1.65	1.36	0.20	0.00
Nintoku	197-1205A	37	R	12	18	19												
Nintoku	197-1205A	41	R	3	24	26												
Nintoku	197-1205A	41	R	5	62	65												
Nintoku	197-1205A	43	R	4	43	45												
Nintoku	197-1205A	44	R	2	23	26												
Nintoku	197-1205A	44	R	2	105	108												
Nintoku*	197-1205A	45	R	1	98	100	23.11	6.11	2.08	6.44	1.04	5.78	5.18	1.10	2.92	2.39	0.34	0.09
Ojin*	55-430A	5	R	4	88		59.90	15.32	4.77	14.51	2.14	10.86	13.22	1.92	4.73	3.38	0.45	0.07
Ojin*	55-430A	5	R	3	56	58	55.20	14.14	4.40	13.50	2.01	10.27	12.25	1.83	4.54	3.33	0.45	0.09

Seamount							ICPMS Trace Elements											
ODP Sample name																		
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	Nd	Sm	Eu	Gd	Tb	Dy	Pr	Ho	Er	Yb	Lu	Cs
Koko	197-1206A	3	R	2	103	106	20.04	5.31	1.82	5.81	0.98	5.50	4.37	1.09	2.81	2.35	0.34	0.05
Koko	197-1206A	3	R	2	103	106	20.40	5.59	1.80	6.18	1.03	5.81	4.20	1.22	2.93	2.39	0.35	0.05
Koko	197-1206A	4	R	3	34	37												
Koko	197-1206A	7	R	4	61	63												
Koko	197-1206A	9	R	1	7	9												
Koko	197-1206A	9	R	2	145	147	12.06	3.39	1.23	3.76	0.63	3.44	2.48	0.67	1.69	1.38	0.20	0.06
Koko	197-1206A	11	R	1	9	14												
Koko	197-1206A	14	R	1	100	104	12.14	3.43	1.25	3.79	0.63	3.44	2.50	0.67	1.69	1.40	0.20	0.07
Koko	197-1206A	15	R	1	10	13	18.78	5.00	1.77	5.42	0.89	4.87	3.91	0.94	2.39	1.97	0.29	0.04
Koko	197-1206A	15	R	4	50	53												
Koko	197-1206A	16	R	2	59	61	20.69	5.41	1.88	5.85	0.94	5.19	4.33	1.01	2.61	2.14	0.30	0.05
Koko	197-1206A	18	R	1	58	61												
Koko	197-1206A	19	R	3	76	79												
Koko	197-1206A	20	R	3	115	118												
Koko	197-1206A	21	R	5	49	53												
Koko	197-1206A	22	R	3	13	17												
Koko	197-1206A	24	R	1	18	21												
Koko	197-1206A	24	R	3	6	9												
Koko	197-1206A	25	R	1	35	39												
Koko	197-1206A	26	R	1	41	44												
Koko	197-1206A	29	R	1	31	38												
Koko	197-1206A	29	R	1	87	90												
Koko	197-1206A	30	R	2	1	4	21.16	6.05	2.00	6.78	1.10	6.09	4.16	1.26	3.06	2.42	0.35	0.10
Koko	197-1206A	31	R	1	110	113												
Koko	197-1206A	33	R	1	48	52												
Koko	197-1206A	38	R	1	68	72	13.69	3.77	1.34	4.20	0.71	3.93	2.90	0.78	2.00	1.67	0.24	0.03
Koko	197-1206A	39	R	3	90	94												
Koko	197-1206A	41	R	1	4	7	22.24	5.95	2.09	6.47	1.07	5.92	4.78	1.15	2.92	2.37	0.34	0.01
Koko	197-1206A	42	R	3	33	37												
Koko	197-1206A	45	R	1	62	68												
MORB	16-153	29	R	4	92	96	5.96	2.38	0.89	3.32	0.67	4.36	1.02	0.97	2.94	2.85	0.43	0.03
MORB	91-595A	10	R	1	103	107	9.7	3.40	1.29	4.63	0.90	5.63	1.74	1.26	3.59	3.41	0.52	0.046
MORB	91-595B	7	R	2	80	82	11.6	3.95	1.45	5.28	1.01	6.38	2.17	1.40	3.98	3.92	0.60	0.208
Major and trace element concentration data for Emperor																		
Sample names in bold font (and with an asterisk) have a																		
All other trace elements analyzed by ICP-MS. See Text																		

Table S1. Major & trace element data for Emperor Seamounts & Mesozoic MORB																		
Seamount																		
ODP Sample name																		
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	U	Th	Pb	Cr	Ni	Cu	Zn	Co	Sc	V	Mo	Sn
Meiji*	19-192A	5	R	3	98	100	0.40	0.60	1.12	69.0	51.0		96.8	43.9	40.5			0.65
Meiji*	19-192A	6	R	3	23	35	0.27	0.61	0.63	62.0	38.7	299.4	90.6	38.2	45.7	281.7	0.34	1.09
Detroit*	197-1203A	17	R	4	57	63	0.75	0.51	0.72	346.9	138.9	128.5	108.5	45.1	38.9	278.3	0.28	1.79
Detroit*	197-1203A	18	R	3	114	116	0.57	0.50	0.57	204.2	76.1	120.7	86.9	48.3	35.9	273.4		0.53
Detroit	197-1203A	32	R	5	40	48												
Detroit*	197-1203A	37	R	2	89	93	0.06	0.19	0.96	1141.4	483.2	119.0	90.2	60.2	30.5	238.9	0.25	0.84
Detroit	197-1203A	40	R	5	104	107												
Detroit*	197-1203A	49	R	3	50	54	0.14	0.43	0.58	317.6	150.1	93.8	99.5	46.3	37.1	333.8	0.49	1.40
Detroit*	197-1203A	58	R	4	31	34	0.11	0.34	0.68	304.9	140.7	112.7	85.4	42.5	34.6	275.1	0.44	1.13
Detroit	197-1203A	59	R	2	70	73												
Detroit	197-1203A	26	R	2	6	10												
Detroit	197-1203A	44	R	1	75	78												
Detroit*	197-1203A	53	R	5	123	128	0.30	0.82	0.84	223.2	111.3	75.3	125.8	45.9	36.7	337.7	0.78	1.93
Detroit*	197-1203A	62	R	3	114	118	0.41	0.83	0.66	135.2	101.7	64.7	103.8	47.4	29.5	299.4		0.73
Detroit*	197-1203A	65	R	4	21	25	0.33	0.85	0.89	193.9	95.9	35.2	135.8	52.6	39.4	373.7	0.57	2.04
Detroit	197-1203A	88	R	2	4	6												
Detroit	197-1204A	7	R	3	32	35												
Detroit*	197-1204A	9	R	2	77	80	0.16	0.51	0.54	150.4	77.9	76.5	89.0	38.1	35.6	302.3		0.55
Detroit	197-1204A	10	R	2	110	113												
Detroit	197-1204A	10	R	5	44	48												
Detroit	197-1204B	1	R	4	54	57												
Detroit*	197-1204B	2	R	2	76	80	1.06	0.56	0.49	139.8	60.9	87.7	89.0	33.3	36.6	310.3		0.59
Detroit	197-1204B	8	R	1	79	81												
Detroit	197-1204B	10	R	1	10	13												
Detroit	197-1204B	13	R	1	122	126												
Detroit	197-1204B	14	R	2	4	7												
Detroit	197-1204B	15	R	1	132	135												
Suiko*	55-433C	31	R	4	46		0.53	0.49	1.85	583.8	401.3	44.4	91.8	64.8	24.3	207.1		0.32
Suiko*	55-433C	23	R	3	59		0.16	0.39	0.51	598.1	371.5	97.3	94.6	55.0	25.7	227.8		0.32
Suiko	55-433A	31	R	4	46	50	0.60	2.04	1.89	52.3	39.4	76.6	131.3	38.1		342.5	1.60	1.80
Nintoku	197-1205A	6	R	2	84	86												
Nintoku*	197-1205A	8	R	1	5	7	0.73	2.46	1.73	87.8	56.5	42.3	126.5	35.2	17.1	202.8	2.01	2.11
Nintoku	197-1205A	13	R	2	90	92												
Nintoku*	197-1205A	18	R	5	63	65	0.51	1.65	1.10	56.5	62.5	49.8	104.9	40.1	19.0	240.8		0.63
Nintoku	197-1205A	20	R	7	100	103												
Nintoku	197-1205A	21	R	3	75	78												
Nintoku	197-1205A	26	R	2	28	30												
Nintoku	197-1205A	28	R	4	2	4												
Nintoku	197-1205A	32	R	2	117	119												
Nintoku	197-1205A	33	R	4	81	84												
Nintoku*	197-1205A	35	R	2	29	31	0.16	0.50	0.49	427.9	183.5	78.6	94.8	48.3	25.3	244.8	0.38	0.89
Nintoku	197-1205A	37	R	12	18	19												
Nintoku	197-1205A	41	R	3	24	26												
Nintoku	197-1205A	41	R	5	62	65												
Nintoku	197-1205A	43	R	4	43	45												
Nintoku	197-1205A	44	R	2	23	26												
Nintoku	197-1205A	44	R	2	105	108												
Nintoku*	197-1205A	45	R	1	98	100	0.50	1.59	1.18	65.9	61.1	52.0	140.7	46.3	23.1	309.5		0.89
Ojin*	55-430A	5	R	4	88		1.35	3.28	8.79	0.4	11.5	24.6	141.8	34.0	14.4	176.0		2.24
Ojin*	55-430A	5	R	3	56	58	1.10	3.01	2.82	0.1	10.8	23.7	162.9	30.8	13.6	167.0		1.93

Seamount							ODP Sample name											
	Exp - Hole	Core	Type	Sec	Top (cm)	Bot (cm)	U	Th	Pb	Cr	Ni	Cu	Zn	Co	Sc	V	Mo	Sn
Koko	197-1206A	3	R	2	103	106	0.34	1.11	1.09	316.6	197.5	76.6	118.1	45.5	26.9	325.4	0.70	2.49
Koko	197-1206A	3	R	2	103	106	0.36	1.16	1.08	270.2	175.4	76.6	120.8	46.6		317.5	0.69	1.82
Koko	197-1206A	4	R	3	34	37												
Koko	197-1206A	7	R	4	61	63												
Koko	197-1206A	9	R	1	7	9												
Koko	197-1206A	9	R	2	145	147	0.12	0.45	0.74	946.7	749.2	83.5	105.7	71.9	21.5	212.7	0.34	1.23
Koko	197-1206A	11	R	1	9	14												
Koko	197-1206A	14	R	1	100	104	0.08	0.46	0.61	937.6	763.9	63.1	105.1	73.9	22.5	215.3	0.44	1.23
Koko	197-1206A	15	R	1	10	13	0.22	0.68	0.84	374.9	185.7	91.5	110.9	47.3	31.3	307.1	0.55	1.74
Koko	197-1206A	15	R	4	50	53												
Koko	197-1206A	16	R	2	59	61	0.60	0.69	0.80	351.4	143.6	61.6	102.6	44.5	28.7	297.5	0.59	1.81
Koko	197-1206A	18	R	1	58	61												
Koko	197-1206A	19	R	3	76	79												
Koko	197-1206A	20	R	3	115	118												
Koko	197-1206A	21	R	5	49	53												
Koko	197-1206A	22	R	3	13	17												
Koko	197-1206A	24	R	1	18	21												
Koko	197-1206A	24	R	3	6	9												
Koko	197-1206A	25	R	1	35	39												
Koko	197-1206A	26	R	1	41	44												
Koko	197-1206A	29	R	1	31	38												
Koko	197-1206A	29	R	1	87	90												
Koko	197-1206A	30	R	2	1	4	0.29	0.80	0.83	236.4	86.4	94.7	117.2	41.8		304.7	0.69	1.44
Koko	197-1206A	31	R	1	110	113												
Koko	197-1206A	33	R	1	48	52												
Koko	197-1206A	38	R	1	68	72	0.17	0.55	0.61	857.5	854.1	77.5	106.5	72.4	23.6	226.5	0.50	1.57
Koko	197-1206A	39	R	3	90	94												
Koko	197-1206A	41	R	1	4	7	0.39	0.93	0.94	240.6	106.0	149.8	119.2	42.2	31.9	334.2	0.68	2.17
Koko	197-1206A	42	R	3	33	37												
Koko	197-1206A	45	R	1	62	68												
MORB	16-153	29	R	4	92	96	0.03	0.07	0.05	289.8	123.4	85.0	69.1	42.3	40.7	277.9		0.15
MORB	91-595A	10	R	1	103	107	0.203	0.117	0.815	231.4	82.4	66.8	80.0	35.9	45.6	331.2	0.13	1.02
MORB	91-595B	7	R	2	80	82	0.125	0.179	66.0	185.7	69.9	63.1	100.6	43.0	45.4	369.3	0.20	1.29
Major and trace element concentration data for Emperor																		
Sample names in bold font (and with an asterisk) have a																		
All other trace elements analyzed by ICP-MS. See Text																		