

**Appendix A from N. D. Sheldon, “Quaternary Glacial-Interglacial Climate Cycles in Hawaii”  
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**Online Tables**

**Table A1**  
Geochemical Data

Sample	Core depth (m)	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Total iron (Fe <sub>2</sub> O <sub>3</sub> )	MnO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>
HS01	65.11	34.4	4.10	16.80	18.70	.25	5.46	4.00	1.43	.55	.58
HS02		40.5	2.25	11.60	14.56	.20	16.20	4.83	1.05	.33	.25
HS03		32.3	3.79	20.01	19.42	.36	2.39	.79	1.23	.89	.34
HS04		35.1	3.12	18.18	17.32	.21	3.80	1.97	1.04	.42	.18
HS06	98.79	32.8	3.17	16.02	18.66	.27	7.62	1.17	1.04	.37	.24
HS09	153.65	38.1	2.74	17.18	15.59	.22	5.26	3.30	.94	.34	.14
HS14	202.17	29.8	3.29	18.35	16.45	.23	2.61	1.36	.97	.43	.37
HS15		21.1	3.46	25.6	18.33	.20	1.86	.99	.80	.25	.40
HS15B		26.0	6.19	15.94	30.48	.13	1.06	.52	.61	.69	.50
HS16		21.2	3.99	25.44	20.39	.13	2.26	.38	.72	.29	.43
HS18		42.1	2.44	14.00	13.82	.18	10.50	6.27	.93	.20	.16
HS19		47.0	2.33	13.75	13.31	.18	10.30	9.67	1.83	.12	.21
HS21		33.1	3.91	19.78	12.15	.08	2.06	2.06	1.42	.79	.55
HS22	238.14	30.2	3.82	21.97	13.61	.27	1.02	.87	1.50	.92	.60
HS23		27.6	3.92	21.08	16.66	1.43	.91	.74	1.31	.84	.54
HS24		26.1	3.02	20.57	17.54	1.71	.90	.68	1.03	.66	.60
HS25		36.7	2.21	12.46	14.90	.34	15.00	2.55	.39	.19	.23
HS27	257.89	39.1	3.82	14.64	16.04	.22	7.78	6.54	1.01	.32	.36
HS28		28.8	3.53	19.88	22.89	.40	2.83	1.98	.45	.33	.50
HS29		41.6	3.11	13.19	14.10	.20	8.93	8.51	.79	.13	.30
HS30	360.61	29.5	4.79	15.51	24.90	.24	5.25	1.66	.21	.32	.22
HS31		31.4	4.05	16.67	20.71	.22	3.30	2.30	.14	.24	.20
HS32	402.37	33.9	5.36	14.67	25.31	.13	2.80	2.02	.30	.53	.16
HS34	720.88	38.3	2.24	9.53	14.66	.21	18.30	1.98	1.12	.48	.11
HS35	772.79	38.7	3.20	15.73	16.76	.24	11.00	5.66	1.90	.37	.25
HS38	448.70	42.1	3.57	13.59	16.53	.22	9.32	9.62	1.31	.12	.27
HS39	560.13	34.8	3.26	17.24	18.11	.32	7.18	2.47	1.48	.44	.11
HS40		33.8	3.08	16.40	17.31	.24	5.40	1.17	1.62	.54	.15
HS41	510.17	47.0	2.76	13.36	13.17	.21	8.46	11.40	1.88	.16	.25
HS43	540.75	36.3	3.85	14.35	21.62	.27	12.70	5.34	.79	.19	.20
HS44		40.0	2.79	13.11	15.12	.22	14.70	7.67	1.21	.18	.14
HS45	661.33	44.8	2.71	11.60	14.15	.20	14.70	8.36	1.46	.17	.20

**Table A2**  
Trace Elements and Calculated MAP/MAT

Sample	LOI	Cr <sub>2</sub> O <sub>3</sub>	Ba	Sr	Y	Nb	Zr	Rb	MAP	MAT
HS01	13.2	.12	313	184	23	...	175	7	774	17.5
HS02	6.9	.14	417	132	17	...	110	17	X	X
HS03	17.5	.07	314	136	32	...	180	26	X	X
HS04	18.2	.07	356	79	28	...	142	7	X	X
HS06	17.1	.16	389	106	23	...	146	10	1084	17.5
HS09	16.0	.06	370	56	17	...	121	9	869	16.5
HS14	25.9	.06	291	116	16	...	164	11	1113	21.0
HS15	26.7	.08	236	61	...	...	157	11	X	X
HS15B	17.5	.12	...	85	21	...	242	19	X	X
HS16	24.3	.12	201	52	...	...	163	16	X	X
HS18	8.9	.09	367	100	14	...	118	13	X	X
HS19	1.0	.09	373	243	16	...	111	17	X	X
HS21	23.9	.06	235	104	41	45	444	21	X	X
HS22	25.0	.04	226	74	43	50	503	17	1167	24.2
HS23	24.8	.04	224	66	40	36	409	15	X	X
HS24	26.9	.02	322	58	37	37	401	12	X	X
HS25	14.8	.14	391	50	22	...	124	13	X	X
HS27	10.0	.08	433	241	26	...	199	7	615	14.4
HS28	16.7	.06	401	165	23	...	218	14	X	X
HS29	8.7	.08	444	229	22	...	161	10	X	X
HS30	16.2	.18	223	127	33	...	178	14	1116	18.5
HS31	20.4	.08	279	132	26	...	187	12	X	X
HS32	13.7	.12	98	102	22	...	164	30	1026	16.0
HS34	12.6	.19	450	129	19	...	110	18	775	10.9
HS35	5.9	.15	447	201	19	...	156	15	640	15.3
HS38	3.0	.08	437	202	20	5	169	7	495	12.9
HS39	14.4	.12	383	113	21	...	140	15	902	17.7
HS40	20.0	.11	372	143	28	...	130	17	X	X
HS41	1.0	.06	383	280	22	...	134	9	449	11.9
HS43	3.8	.23	433	80	14	...	164	10	674	14.9
HS44	4.53	.16	430	142	23	...	141	7	X	X
HS45	1.34	.14	442	207	19	...	133	14	484	11.2

**Note.** Mean annual precipitation (MAP) and mean annual temperature (MAT) estimates are listed above for Bw/Bt horizons; other data correspond to other paleosol horizons. LOI = loss on ignition. All trace elements are in parts per million.

**Table A3**  
Horizonation of Profiles Sampled in Depth and Described in the Discussion

Sample ID	Depth (cm)	Horizon	$\tau_{Si}$	$\tau_{Al}$
HS01	-10	A/Bw <sup>a</sup>	-.254	-.297
HS02	-22	Bw	.6007	-.115
HS03	-57	C	-.242	-.094
HS04	-70	R	0	0
HS14	10	Overlying basalt		
HS14	-16	A/Bw <sup>a</sup>	-.698	.2538
HS15	-22	Bw	-.792	-.564
HS16	-31	Bw	-.737	.0804
HS18	-55	C	-.146	-.028
HS19	-152	R	0	0
HS21	0	A	-.49	-.103
HS22	-10	Bw	-.525	.0201
HS23	-29	BC	-.577	-.046
HS24	-53	Cox	-.48	.2081
HS25	-69	R	0	0

<sup>a</sup> Sampled at contact between A and Bw horizons.

**Table A4**  
Published and Unpublished HSDP Core Ages

Core depth (m)	Age (kyr)	Uncertainty (kyr)
268.2	132 <sup>a</sup>	32
279.3	234	32
299.2	199 <sup>a</sup>	9
327.0	232 <sup>a</sup>	4
332.7	241 <sup>a</sup>	5
415.7	326 <sup>a</sup>	23
935.5	400 <sup>a</sup>	26
984.5	370	133
995.1	391 <sup>a</sup>	40
1037.7	380	80
2243.2	520	82
2615.0	578	110
2789.9	612	140

<sup>a</sup> Age determinations are from Sharp et al. (1996); other ages are unpublished ages from the H-2 core.