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Erosion of the Tsangpo Gorge by megafloods, Eastern Himalaya

Karl A. Lang^{1,*}, Katharine W. Huntington¹, David R. Montgomery¹

*¹University of Washington, Department of Earth and Space Sciences and Quaternary
Research Center, Box 351310, Seattle, WA 98195 USA*

*Correspondence to: karllang@uw.edu

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Table DR2. Sample location and new petrographic data

Methods

Sampling

All samples collected for the new analyses included in this work were collected as random “grab” samples from active channel bars and banks or freshly exposed faces of flood deposits. Modern sediment samples were collected during low-flow periods in 2004, 2005, 2008, and 2011. When sampling active channel bedload, care was taken to avoid contamination from 2000 flood overbank deposits or recent landslides.

U-Pb and petrographic analyses

Samples were wet sieved into multiple size fractions. Standard magnetic and density separations were used to isolate dense minerals from the 63-250 μm size fraction; the remaining light mineral fraction was mounted on petrographic slides, etched and stained to distinguish feldspars. Over 300 grains were manually counted on polished grain mounts using the line traverse method following the Gazzi-Dickinson classification scheme with an Olympus BX50 polarizing microscope. Zircons were further separated to near 100% purity, and poured onto grain mounts, polished and imaged by high resolution backscattered electron and cathodoluminescence imaging on an Hitachi 3400N SEM at the University of Arizona. Zircons cores were randomly analyzed for U-Th-Pb by laser-ablation multi-collector inductively coupled mass spectrometry (LA-MC-ICPMS) using a 30 μm spot diameter at the Arizona LaserChron Center (Gehrels, 2011). U-Pb age data was reduced using NUPMagecalc and ISOPLLOT with the following standard age filters:

1. 10% error cutoff for $^{206}\text{Pb}/^{238}\text{U}$ and $^{206}\text{Pb}/^{207}\text{Pb}$ ratios (individually, higher $^{206}\text{Pb}/^{238}\text{U}$ error was allowed for extremely young ages)
 2. 30% maximum discordance, 5% maximum reverse discordance
 3. $^{206}\text{Pb}/^{238}\text{Pb}$ ages used under 1000 Ma, otherwise $^{206}\text{Pb}/^{207}\text{Pb}$ ages used
- Ages were individually assessed for excess ^{204}Pb , with a typical cutoff of 500 cps.

Synthetic CDF mixture modeling

We iteratively compared modeled cumulative probability density functions of zircon U-Pb crystallization ages <1000 Ma (older ages in this region are not diagnostic of a specific source area) to the observed sample CDFs for all combinations of four upstream sources (numbers correspond to numbered locations in Figure 1B): 1. Yarlung Tsangpo river at Pai; 2. the Layue Qu tributary; a mean CDF from two statistically indistinguishable grain-age populations from the Yigong (3.) and Parlun (4.) tributaries; and 5. a small tributary draining the western flank of the Namche Barwa Massif (proxy for the Tsangpo Gorge). Best fit synthetic CDFs were determined using two fit metrics, both reported in Figure 3B. The first uses a two sample Kolmogorov-Smirnov test, the second is the total absolute difference between the model and observation. Importantly, this modeling approach assumes an efficient fluvial system with little sediment storage in the Tsangpo Gorge itself, an assumption that is consistent with our observations and those of Stewart et al. (2008) and Finnegan et al. (2008). Furthermore this approach assumes there is no significant variability in source rock zircon concentration. Several datasets indicate this assumption is reasonable; as noted by Stewart et al. (2008) and Booth et al. (2004), zirconium concentration is broadly uniform across the region, and Garzanti et al. (2004), as well as our own observations of estimated zircon percentage by

weight, confirm that there is no significant variation in zircon concentration in detrital sediments sampled from this region.

Estimating bed shear stress during peak discharges

To quantify the amount of erosion across the spectrum of discharges presented in this paper, we modeled the bed shear stress as a function of flow depth and hillslope angle for a trapezoidal river valley. Then, using estimated values of peak discharge for annual flows, the 2000 flood event and two megaflood magnitudes, we solved for the bed shear stress in a simple trapezoidal valley and the intermediate axis length of a median block size that could just be moved by that flow.

Discharge Q values:

Annual peak discharge = $\sim 2 \times 10^4 \text{ m}^3/\text{s}$ (from Goswami, 1985)

2000 flood peak discharge = $\sim 6.1 \times 10^4 \text{ m}^3/\text{s}$ (from Evans and Delaney, 2010)

Peak discharge from a megaflood emptying an 80 km^3 lake = $\sim 1.0 \times 10^6 \text{ m}^3/\text{s}$ (from Montgomery et al., 2004)

Peak discharge from a megaflood emptying an 800 km^3 lake = $\sim 5.0 \times 10^6 \text{ m}^3/\text{s}$ (from Montgomery et al., 2004)

Variables:

bed roughness length scale $k_s = 0.1$ to 1 m

hillslope angle $\phi = 37$ to 39 degrees (modal values for outer and inner gorge, respectively, from Larsen and Montgomery, 2012)

mean bed slope $S = 0.02$ (from Finnegan et al., 2008)

average rock density $\rho_s = 2700 \text{ kg/m}^3$

water density $\rho = 1000 \text{ kg/m}^3$

kinematic viscosity at 20°C $\nu = 1 \times 10^{-6} \text{ m}^2/\text{s}$

empirical constants for block shape and roughness $C_1 = 20$, $C_2 = 1.1$ (from Ferguson and Church, 2004)

We followed the approach of Lamb and Fonstad (2010) where

$$Q = 8.1A \left(\frac{\tau_b}{\rho} \right)^{\frac{1}{2}} \left(\frac{h}{k_s} \right)^{\frac{1}{6}} \quad (1)$$

h is the flow depth and A is the cross sectional area of the flow, which we modeled as a trapezoidal valley

$$A = \left(\frac{h^2}{\tan \phi} \right) + wh \quad (2)$$

w is the flat bottom width. Bed shear stress τ_b is

$$\tau_b = \rho g h_r S \quad (3)$$

h_r is the hydraulic radius, closely approximated by mean depth \bar{h}

$$h_r = \frac{A \sin \phi}{2h+w} \cong \bar{h} \quad (4)$$

Using τ_b we solve for the intermediate axis length of a median block size $\overline{D_2}$ using the relation

$$\tau_{*c} = 0.15S^{0.25} \quad (5)$$

for the critical stress for incipient motion from Lamb et al. (2008) and citations therein

$$\overline{D_2} = \frac{\tau_b}{\tau_{*c}g(\rho_s - \rho)} \quad (6)$$

for the bed shear stress for suspension

$$\tau_b = \rho(0.8w_s)^2 \quad (5)$$

using the settling velocity w_s approximated from Ferguson and Church (2004)

$$w_s = \frac{RgD^2}{C_1v + (0.75C_2RgD^3)^{0.5}} \quad (8)$$

where

$$R = \frac{\rho_s - \rho}{\rho} \quad (9)$$

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios								error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*	±		207Pb*	±	206Pb*	±					
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*	(Ma)		235U	(Ma)	207Pb*	(Ma)					
08KH05-1	443	1656	38.7	11.1403	83.6	0.0143	89.4	0.0012	31.5	0.35	7.4	2.3	14.4	12.8	1420.5	2117.7	7.4	2.3	NA		
08KH05-2	108	42145	2	9.6009	1.4	4.3482	2.6	0.3028	2.3	0.86	1705	33.9	1702.5	21.8	1699.5	25.1	1699.5	25.1	100.3		
08KH05-3	776	16045	1.7	23.1694	10.6	0.0385	10.9	0.0065	2.4	0.22	41.5	1	38.3	4.1	-158.3	264.9	41.5	1	NA		
08KH05-4	656	21379	0.4	20.7173	7.4	0.0767	7.6	0.0115	1.8	0.23	73.8	1.3	75	5.5	112.5	175.2	73.8	1.3	NA		
08KH05-5	866	17768	0.7	21.2172	5.6	0.0759	5.7	0.0117	1	0.18	74.9	0.8	74.3	4.1	55.9	134.4	74.9	0.8	NA		
08KH05-6	1530	3255	5.4	16.9103	33.6	0.0056	35.7	0.0007	11.9	0.33	4.4	0.5	5.6	2	572.1	751.9	4.4	0.5	NA		
08KH05-8	82	59812	2.3	13.7195	2.4	1.6951	3.1	0.1687	2	0.64	1004.8	18.5	1006.7	19.7	1010.8	48	1010.8	48	99.4		
08KH05-9	423	150692	2.3	13.8718	0.6	1.5023	2.8	0.1511	2.7	0.97	907.4	22.8	931.3	16.9	988.5	12.7	907.4	22.8	91.8		
08KH05-10	1980	12176	9.9	12.3808	1	0.7081	3.9	0.0636	3.8	0.97	397.4	14.7	543.6	16.5	1215.9	18.8	397.4	14.7	NA		
08KH05-11	1101	28471	4.1	21.2315	5.1	0.0564	6.7	0.0087	4.3	0.65	55.7	2.4	55.7	3.6	54.3	121.7	55.7	2.4	NA		
08KH05-12	166	102938	1.5	11.719	0.9	2.6174	1.9	0.2225	1.6	0.88	1294.9	19.2	1305.5	13.7	1323.1	17.5	1323.1	17.5	97.9		
08KH05-13	3119	110665	2.3	21.3342	1.5	0.0542	2.9	0.0084	2.4	0.86	53.8	1.3	53.6	1.5	42.8	35.5	53.8	1.3	NA		
08KH05-14	672	362024	5.4	14.1851	1.2	1.2947	6.4	0.1332	6.3	0.98	806.1	47.8	843.4	36.8	942.8	24.1	806.1	47.8	85.5		
08KH05-15	601	7407	0.7	22.4142	19	0.0302	19.2	0.0049	3	0.15	31.6	0.9	30.2	5.7	-76.6	467.2	31.6	0.9	NA		
08KH05-16	245	8873	0.8	22.8003	8.7	0.1089	9.5	0.018	4	0.42	115.1	4.5	105	9.5	-118.6	213.9	115.1	4.5	NA		
08KH05-18	135	43002	4	15.3315	3.2	1.0883	3.8	0.121	2	0.54	736.4	14.1	747.7	20	781.6	67.1	736.4	14.1	94.2		
08KH05-19	570	56904	2	11.9423	1	2.3251	2	0.2014	1.7	0.87	1182.7	18.6	1220	14	1286.4	18.9	1286.4	18.9	91.9		
08KH05-20	1191	243003	1.9	17.4289	0.6	0.5544	2.6	0.0701	2.5	0.97	436.6	10.5	447.9	9.3	506	13.7	436.6	10.5	86.3		
08KH05-21	836	135217	1.7	17.4328	0.9	0.6127	4.6	0.0775	4.5	0.98	481	20.7	485.3	17.6	505.5	20.1	481	20.7	95.1		
08KH05-22	86	3776	0.6	12.5372	9.2	1.9824	15	0.1803	11.8	0.79	1068.4	116.6	1109.6	101.5	1191.1	181.7	1191.1	181.7	89.7		
08KH05-23	79	4605	0.6	22.6507	40.6	0.073	41.2	0.012	6.9	0.17	76.8	5.3	71.5	28.5	-102.4	1035.7	76.8	5.3	NA		
08KH05-24	77	54384	0.9	12.3121	2.1	2.3569	2.9	0.2105	1.9	0.66	1231.3	21.1	1229.6	20.3	1226.8	42.1	1226.8	42.1	100.4		
08KH05-25	577	224149	2.8	7.6177	0.2	6.269	4.3	0.3464	4.3	1	1917.2	71.6	2014.1	37.9	2115.1	2.8	2115.1	2.8	90.6		
08KH05-26	238	52656	2	17.3025	4.7	0.5027	5.1	0.0631	2	0.39	394.4	7.8	413.5	17.5	522	103.9	394.4	7.8	NA		
08KH05-27	407	376442	201.6	12.5162	0.5	2.2635	1.2	0.2055	1	0.89	1204.6	11.4	1201	8.2	1194.5	10.5	1194.5	10.5	100.9		

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Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH05-28	1117	35599	1.4	21.4001	1.8	0.0747	3.4	0.0116	2.9	0.84	74.3	2.1	73.1	2.4	35.4	43.7	74.3	2.1	NA
08KH05-29	250	253560	1.5	6.1156	0.2	10.4513	1.7	0.4636	1.7	0.99	2455.3	34.2	2475.6	15.7	2492.3	3.7	2492.3	3.7	98.5
08KH05-30	310	12376	1.2	21.7715	13.1	0.1094	13.6	0.0173	3.4	0.25	110.4	3.8	105.4	13.6	-6	318.1	110.4	3.8	NA
08KH05-31	137	123859	1.8	10.1853	0.8	3.8165	2.8	0.2819	2.6	0.96	1601.1	37.5	1596.2	22.3	1589.8	15.2	1589.8	15.2	100.7
08KH05-33	5008	67545	0.6	20.6338	0.8	0.079	44.2	0.0118	44.2	1	75.8	33.3	77.2	32.9	122	18.2	75.8	33.3	NA
08KH05-35	33	4679	1	17.6368	11.8	0.6575	12.6	0.0841	4.6	0.36	520.6	23	513.1	51	479.8	261.1	520.6	23	108.5
08KH05-36	714	135839	4.3	10.4846	0.5	2.6293	3.2	0.1999	3.2	0.99	1175	34.1	1308.9	23.6	1535.5	9.1	1535.5	9.1	76.5
08KH05-37	391	12295	2.6	21.8625	16.3	0.0535	16.6	0.0085	3	0.18	54.5	1.6	53	8.6	-16	396.5	54.5	1.6	NA
08KH05-38	85	31099	1.3	17.7859	9	0.6586	9.6	0.085	3.3	0.35	525.6	16.9	513.7	38.9	461.2	200.9	525.6	16.9	114
08KH05-39	2356	17189	1.1	17.123	2.4	0.6332	9.2	0.0786	8.8	0.96	488	41.6	498.1	36.1	544.8	53.5	488	41.6	89.6
08KH05-41	524	26081	0.7	21.7819	9.8	0.0809	10.1	0.0128	2.3	0.23	81.9	1.9	79	7.7	-7.1	237.6	81.9	1.9	NA
08KH05-42	166	193969	0.5	9.5767	0.8	4.2781	3	0.2971	2.9	0.96	1677.1	42.8	1689.2	24.8	1704.1	15.5	1704.1	15.5	98.4
08KH05-43	503	51026	4.1	19.4262	3.3	0.2366	3.8	0.0333	2	0.52	211.4	4.1	215.6	7.4	262.2	75.3	211.4	4.1	NA
08KH05-44	735	31073	24.4	20.0014	3.2	0.0861	15.1	0.0125	14.8	0.98	80	11.8	83.9	12.2	194.8	75	80	11.8	NA
08KH05-45	570	31693	9.2	11.6834	1.1	1.129	5.9	0.0957	5.8	0.98	589	32.5	767.3	31.7	1329	22.1	589	32.5	44.3
08KH05-47	854	9610	50	19.4755	13.5	0.0288	14.6	0.0041	5.5	0.38	26.2	1.4	28.9	4.1	256.4	311.7	26.2	1.4	NA
08KH05-48	509	26464	1.4	19.0522	5.4	0.0875	5.7	0.0121	1.8	0.32	77.5	1.4	85.2	4.6	306.7	122.4	77.5	1.4	NA
08KH05-49	534	587	0.6	17.4724	22.6	0.0894	22.8	0.0113	3.5	0.15	72.6	2.5	86.9	19	500.6	502.9	72.6	2.5	NA
08KH05-50	3835	5655	9.5	13.7755	0.6	0.2994	2.6	0.0299	2.6	0.97	190	4.8	265.9	6.2	1002.6	12.5	190	4.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH15-1	138	2619	1.1	18.3573	18.5	0.1337	19.4	0.0178	6	0.31	113.8	6.8	127.4	23.3	390.7	418.4	113.8	6.8	NA	
08KH15-2	177	42883	0.6	17.2183	2.7	0.6522	3	0.0814	1.4	0.45	504.7	6.7	509.8	12.1	532.7	59.1	504.7	6.7	94.8	
08KH15-3	5621	59917	0.8	20.6131	0.6	0.1458	24.4	0.0218	24.4	1	139	33.5	138.2	31.5	124.3	13.5	139	33.5	NA	
08KH15-4	506	113126	1.4	17.2813	1.9	0.5415	4.2	0.0679	3.7	0.89	423.3	15.3	439.4	14.9	524.7	41	423.3	15.3	80.7	
08KH15-5	852	128424	6.8	12.5244	5.6	0.1777	49.1	0.0161	48.8	0.99	103.2	49.9	166.1	75.3	1193.2	110.8	103.2	49.9	NA	
08KH15-6	322	325094	1.3	10.4074	0.5	3.4839	1.4	0.263	1.3	0.93	1505	18	1523.6	11.4	1549.4	9.8	1549.4	9.8	97.1	
08KH15-8	557	46159	2.1	12.4518	0.6	2.1467	4	0.1939	3.9	0.99	1142.3	41.1	1164	27.5	1204.6	11.7	1204.6	11.7	94.8	
08KH15-9	4826	68824	5.2	20.7637	0.9	0.059	3.2	0.0089	3	0.95	57	1.7	58.2	1.8	107.2	22.3	57	1.7	NA	
08KH15-11	361	173029	1.9	13.9802	1.4	1.3712	4.4	0.139	4.2	0.94	839.2	32.8	876.7	25.9	972.6	29.5	839.2	32.8	86.3	
08KH15-12	2321	107137	2.3	17.3393	1.1	0.4666	4.7	0.0587	4.6	0.97	367.6	16.5	388.8	15.3	517.3	23.2	367.6	16.5	NA	
08KH15-13	95	53621	0.9	12.5342	1.5	2.1246	2.3	0.1931	1.7	0.76	1138.3	18.2	1156.8	15.9	1191.6	29.8	1191.6	29.8	95.5	
08KH15-14	98	28500	1.1	14.7939	1.2	1.2123	2.6	0.1301	2.3	0.89	788.3	16.9	806.2	14.3	856.2	24.6	788.3	16.9	92.1	
08KH15-15	214	10697	1.8	23.566	28	0.0583	28.2	0.01	3.9	0.14	63.9	2.5	57.5	15.8	-200.7	712.8	63.9	2.5	NA	
08KH15-17	340	57847	5.5	13.2133	5.7	0.6523	11.5	0.0625	10	0.87	390.9	38	509.9	46.2	1086.7	113.8	390.9	38	NA	
08KH15-18	1956	88138	1.5	20.5751	2.5	0.0758	4	0.0113	3.1	0.77	72.5	2.2	74.2	2.9	128.7	59.7	72.5	2.2	NA	
08KH15-20	290	16068	5.7	15.7745	3.1	0.3839	7.7	0.0439	7	0.91	277.1	19	329.9	21.6	721.4	65.8	277.1	19	NA	
08KH15-21	1690	1960	5	17.3645	7.4	0.0567	17.4	0.0071	15.7	0.91	45.9	7.2	56	9.5	514.1	162	45.9	7.2	NA	
08KH15-22	670	47372	0.8	20.6761	5	0.0778	5.5	0.0117	2.3	0.43	74.8	1.7	76.1	4	117.2	117.2	74.8	1.7	NA	
08KH15-23	543	2014	1.2	17.8974	15.5	0.0934	15.7	0.0121	2.1	0.14	77.7	1.6	90.7	13.6	447.3	346.7	77.7	1.6	NA	
08KH15-24	395	252962	1.1	13.0601	1.2	1.9306	8.4	0.1829	8.3	0.99	1082.6	82.8	1091.7	56.3	1110	24.7	1110	24.7	97.5	
08KH15-25	273	130085	2.2	15.1623	1.2	1.2052	1.5	0.1325	0.9	0.63	802.3	7.1	803	8.4	804.9	24.6	802.3	7.1	99.7	
08KH15-26	350	166636	1.5	12.671	0.4	2.1256	2.4	0.1953	2.3	0.99	1150.2	24.6	1157.2	16.3	1170.1	7.5	1170.1	7.5	98.3	
08KH15-27	769	24691	1.1	22.1216	4.3	0.0736	5.4	0.0118	3.2	0.59	75.7	2.4	72.1	3.7	-44.6	105	75.7	2.4	NA	

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				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH15-28	2086	4457	31.6	14.0252	0.8	0.38	2.5	0.0387	2.4	0.95	244.5	5.7	327.1	7	966.1	15.6	244.5	5.7	NA
08KH15-29	982	25622	1.7	21.6659	8.6	0.0557	9.4	0.0088	3.6	0.39	56.2	2	55	5	5.7	207.6	56.2	2	NA
08KH15-30	455	49756	1.8	13.8476	0.9	1.5369	1.7	0.1544	1.5	0.87	925.3	12.9	945.3	10.6	992	17.4	925.3	12.9	93.3
08KH15-31	416	24844	0.8	22.5964	19.5	0.0725	20.6	0.0119	6.6	0.32	76.2	5	71.1	14.1	-96.5	482.5	76.2	5	NA
08KH15-32	197	45799	2.2	14.0477	1.4	1.4767	2.5	0.1504	2	0.82	903.5	17.1	920.9	15	962.8	29.3	903.5	17.1	93.8
08KH15-33	565	25575	1.6	15.9578	1.4	0.9378	1.8	0.1085	1.2	0.65	664.2	7.4	671.7	8.9	696.9	29.6	664.2	7.4	95.3
08KH15-34	637	28286	1.3	21.1854	9.9	0.0973	11.2	0.0149	5.2	0.47	95.6	5	94.3	10.1	59.5	235.5	95.6	5	NA
08KH15-35	1116	494126	5	8.847	0.4	4.2682	4.5	0.2739	4.4	1	1560.4	61.4	1687.3	36.6	1848.7	8	1848.7	8	84.4
08KH15-36	541	339766	2	12.6914	0.6	2.0744	1.2	0.1909	1	0.88	1126.5	10.5	1140.4	7.9	1166.9	11	1166.9	11	96.5
08KH15-37	394	19404	1.8	17.3158	2.7	0.5229	8.7	0.0657	8.3	0.95	410	32.8	427.1	30.3	520.3	58.2	410	32.8	78.8
08KH15-38	220	20973	1.2	20.0752	10.5	0.1748	10.9	0.0255	2.8	0.26	162	4.5	163.6	16.5	186.2	246.1	162	4.5	NA
08KH15-39	439	20697	2.7	20.3283	7.4	0.1235	8	0.0182	3	0.37	116.4	3.5	118.3	8.9	157	174	116.4	3.5	NA
08KH15-40	529	146123	1.6	13.2605	0.7	1.7737	2.2	0.1706	2	0.94	1015.3	19.1	1035.9	14	1079.5	14.5	1079.5	14.5	94.1
08KH15-41	2750	31340	5.4	19.647	3.8	0.0567	5	0.0081	3.2	0.64	51.9	1.6	56	2.7	236.2	88.3	51.9	1.6	NA
08KH15-42	68	32322	1	12.6696	2.4	2.0969	3.7	0.1927	2.9	0.77	1135.9	29.9	1147.8	25.6	1170.3	46.7	1170.3	46.7	97.1
08KH15-43	179	114303	1.1	11.3139	0.9	2.8266	1.6	0.2319	1.3	0.83	1344.7	15.7	1362.6	11.7	1390.9	16.5	1390.9	16.5	96.7
08KH15-44	552	264634	1.7	11.9198	0.3	2.3508	1.2	0.2032	1.1	0.96	1192.6	12.5	1227.8	8.5	1290.1	6.3	1290.1	6.3	92.4
08KH15-45	1070	22055	1.8	21.7124	6.7	0.0388	7	0.0061	2.1	0.31	39.3	0.8	38.7	2.7	0.6	160.7	39.3	0.8	NA
08KH15-47	540	19321	1.2	20.8584	8.1	0.0747	8.3	0.0113	2.1	0.25	72.4	1.5	73.1	5.9	96.4	190.9	72.4	1.5	NA
08KH15-48	1198	10288	2.5	10.4006	0.4	1.1067	7	0.0835	6.9	1	516.9	34.5	756.6	37.1	1550.7	7.5	1550.7	7.5	33.3
08KH15-49	278	301106	4.2	9.2117	0.5	4.538	1.2	0.3032	1.1	0.9	1707.1	16	1738	9.8	1775.3	9.3	1775.3	9.3	96.2
08KH15-50	106	12316	1.2	16.4562	7.6	0.6081	8.5	0.0726	3.8	0.44	451.7	16.5	482.4	32.7	631	164.7	451.7	16.5	71.6

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH15-53	764	64950	2.1	10.8344	0.6	2.6737	2.2	0.2101	2.1	0.97	1229.3	24	1321.2	16.4	1473.5	11	1473.5	11	83.4	
08KH15-54	65	19582	3.2	14.4103	4.2	1.3506	5.1	0.1412	2.8	0.55	851.2	22.4	867.8	29.7	910.5	87.5	851.2	22.4	93.5	
08KH15-55	224	232619	1.2	11.1745	1.1	3.065	4	0.2484	3.8	0.96	1430.2	49.1	1424	30.4	1414.6	20.1	1414.6	20.1	101.1	
08KH15-56	372	97401	1.1	13.8048	0.9	1.5847	3.7	0.1587	3.6	0.97	949.4	32	964.2	23.2	998.3	18.3	949.4	32	95.1	
08KH15-57	103	34063	1.3	12.7737	1.7	1.975	2.1	0.183	1.2	0.59	1083.2	12.3	1107	14.2	1154.1	33.7	1154.1	33.7	93.9	
08KH15-58	221	102689	2.4	13.1461	1.3	1.3768	3.1	0.1313	2.8	0.9	795.1	20.6	879.1	18	1096.8	26.9	795.1	20.6	72.5	
08KH15-59	1382	21337	3.2	12.199	1	0.6865	9.1	0.0607	9.1	0.99	380.1	33.5	530.7	37.8	1244.9	20.5	380.1	33.5	NA	
08KH15-60	67	58865	1.5	12.5584	2.8	1.944	3.5	0.1771	2.2	0.62	1050.9	21.2	1096.4	23.7	1187.8	54.7	1187.8	54.7	88.5	
08KH15-61	169	51221	2	15.7777	3.5	0.9609	3.9	0.11	1.7	0.45	672.5	11.1	683.7	19.4	721	73.9	672.5	11.1	93.3	
08KH15-63	75	30581	1.2	12.7038	2.5	2.0698	3.3	0.1907	2.1	0.64	1125.2	21.6	1138.9	22.4	1165	50	1165	50	96.6	
08KH15-64	144	54307	1.6	13.9001	2.6	1.6603	2.9	0.1674	1.3	0.43	997.7	11.6	993.5	18.2	984.3	52.8	997.7	11.6	101.4	
08KH15-65	653	11948	1.6	21.4316	11.3	0.0726	11.7	0.0113	3	0.26	72.3	2.2	71.2	8.1	31.9	272	72.3	2.2	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
08KH10-1	548	3146	44.1	18.6701	45.4	0.0404	45.5	0.0055	3.5	0.08	35.1	1.2	40.2	17.9	352.6	1077.2	35.1	1.2	NA		
08KH10-2	288	4736	2.6	16.2694	253	0.0469	253.5	0.0055	6.1	0.02	35.6	2.2	46.6	115.9	655.6	0	35.6	2.2	NA		
08KH10-3	222	37072	0.9	17.4954	2.7	0.5971	3	0.0758	1.4	0.46	470.8	6.3	475.4	11.5	497.6	59.2	470.8	6.3	94.6		
08KH10-4	1303	19042	4.5	21.8306	7.2	0.0476	7.7	0.0075	2.8	0.37	48.4	1.4	47.2	3.6	-12.5	173.4	48.4	1.4	NA		
08KH10-5	2590	59771	5.2	21.4726	3.4	0.0469	4.7	0.0073	3.3	0.7	46.9	1.5	46.6	2.1	27.3	80.7	46.9	1.5	NA		
08KH10-6	1671	9606	1	17.5221	1.5	0.353	17.4	0.0449	17.4	1	282.8	48.1	306.9	46.2	494.3	33.8	282.8	48.1	NA		
08KH10-7	1022	17897	1.1	21.6566	12.2	0.0474	12.6	0.0074	3.3	0.26	47.8	1.6	47	5.8	6.8	294.6	47.8	1.6	NA		
08KH10-8	196	21227	0.6	17.7488	5.2	0.5881	5.6	0.0757	1.9	0.34	470.4	8.5	469.6	20.9	465.9	115.8	470.4	8.5	101		
08KH10-9	482	7502	1.3	22.6831	22.9	0.0462	23.9	0.0076	7.1	0.3	48.8	3.5	45.8	10.7	-105.9	568.7	48.8	3.5	NA		
08KH10-10	1514	23384	10.8	23.7129	8.5	0.0384	8.7	0.0066	1.9	0.22	42.4	0.8	38.3	3.3	-216.3	212.9	42.4	0.8	NA		
08KH10-11	125	17836	1.7	15.8551	8.8	0.3985	9.9	0.0458	4.6	0.46	288.8	13	340.5	28.7	710.6	187.3	288.8	13	NA		
08KH10-12	542	23688	0.4	16.9514	4.6	0.609	7.4	0.0749	5.8	0.79	465.4	26.2	482.9	28.5	566.8	100.2	465.4	26.2	82.1		
08KH10-13	433	7841	2	27.1886	33.4	0.0378	33.7	0.0074	4.1	0.12	47.8	2	37.7	12.5	-572.6	924.8	47.8	2	NA		
08KH10-14	401	15593	1	19.9951	11.8	0.1228	12.2	0.0178	3	0.24	113.8	3.4	117.6	13.5	195.6	274.9	113.8	3.4	NA		
08KH10-16	632	4800	1.2	21.4789	14.2	0.0486	14.4	0.0076	2.5	0.17	48.6	1.2	48.1	6.8	26.6	342.7	48.6	1.2	NA		
08KH10-17	176	5777	1.8	22.4997	16.1	0.1507	19.2	0.0246	10.6	0.55	156.6	16.3	142.6	25.6	-86	395.9	156.6	16.3	NA		
08KH10-18	1031	13774	2.9	20.5221	7.9	0.0504	8.1	0.0075	1.7	0.21	48.2	0.8	49.9	3.9	134.7	185.2	48.2	0.8	NA		
08KH10-19	1483	16892	2	21.4694	5.6	0.047	6.6	0.0073	3.5	0.53	47	1.6	46.6	3	27.7	135.2	47	1.6	NA		
08KH10-20	515	2476	2	16.7643	16.1	0.0583	16.8	0.0071	5	0.3	45.5	2.3	57.5	9.4	590.9	350.6	45.5	2.3	NA		
08KH10-21	1220	23525	7.9	21.2267	6.5	0.043	7	0.0066	2.7	0.39	42.6	1.2	42.8	2.9	54.8	154.8	42.6	1.2	NA		
08KH10-22	917	13678	1.6	20.8374	13.8	0.0481	14.1	0.0073	3	0.21	46.7	1.4	47.7	6.6	98.8	328.5	46.7	1.4	NA		
08KH10-23	236	149271	3.9	10.0897	0.9	3.2502	3.1	0.2378	2.9	0.95	1375.5	36.5	1469.2	24	1607.4	17.4	1607.4	17.4	85.6		
08KH10-24	272	223756	3.8	12.1911	3.4	1.9793	11.2	0.175	10.6	0.95	1039.6	102	1108.5	75.4	1246.2	66.9	1246.2	66.9	83.4		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-25	445	6737	2	26.5035	28.9	0.0474	29.5	0.0091	6	0.2	58.5	3.5	47	13.6	-504.1	783.6	58.5	3.5	NA	
08KH10-26	305	3806	1.1	14.412	17.6	0.071	20.7	0.0074	10.8	0.52	47.7	5.1	69.7	13.9	910.2	365.7	47.7	5.1	NA	
08KH10-27	551	10478	1.5	22.7632	20.3	0.0461	20.4	0.0076	2.3	0.11	48.9	1.1	45.8	9.1	-114.6	504.8	48.9	1.1	NA	
08KH10-28	220	31341	1.1	17.4079	4	0.6036	4.4	0.0762	1.9	0.42	473.5	8.5	479.5	17	508.7	88.7	473.5	8.5	93.1	
08KH10-29	838	15097	3	23.0894	16.2	0.0444	16.8	0.0074	4.1	0.24	47.8	1.9	44.1	7.2	-149.7	405.4	47.8	1.9	NA	
08KH10-30	606	60732	2.2	17.6402	1.5	0.567	2.5	0.0725	2	0.79	451.5	8.5	456.1	9.1	479.4	33.7	451.5	8.5	94.2	
08KH10-31	400	42837	1.1	18.018	1.2	0.5807	1.8	0.0759	1.4	0.76	471.5	6.4	464.9	6.9	432.4	26.5	471.5	6.4	109	
08KH10-32	2607	46984	1.1	21.0087	4.5	0.0492	6.6	0.0075	4.8	0.73	48.1	2.3	48.7	3.1	79.4	107.2	48.1	2.3	NA	
08KH10-34	177	33715	1.7	12.7552	1.6	2.0754	2.8	0.192	2.3	0.82	1132.2	24	1140.7	19.4	1157	32.4	1157	32.4	97.9	
08KH10-35	381	50832	1	17.6873	2.5	0.6111	4.3	0.0784	3.4	0.81	486.5	16.2	484.2	16.4	473.5	55.4	486.5	16.2	102.7	
08KH10-36	89	20786	1	18.2329	12.6	0.5669	12.8	0.075	2.1	0.17	466	9.6	456	47.1	405.9	283.7	466	9.6	114.8	
08KH10-37	1367	6043	6.3	18.6324	18.6	0.0394	19.4	0.0053	5.4	0.28	34.3	1.8	39.3	7.5	357.2	424	34.3	1.8	NA	
08KH10-38	1072	6113	2.6	19.2662	6.9	0.06	8	0.0084	4.1	0.51	53.8	2.2	59.2	4.6	281.2	157.9	53.8	2.2	NA	
08KH10-39	150	38281	1.7	14.2512	3.8	1.2735	5.9	0.1316	4.5	0.76	797.2	33.5	834	33.4	933.3	78	797.2	33.5	85.4	
08KH10-40	206	39200	1.3	18.333	3.6	0.578	4.8	0.0769	3.2	0.66	477.3	14.6	463.2	17.9	393.7	81.4	477.3	14.6	121.3	
08KH10-41	232	6140	1.8	19.9867	36.5	0.0591	37.7	0.0086	9.6	0.25	55	5.2	58.3	21.4	196.6	874	55	5.2	NA	
08KH10-42	1712	187567	1.2	17.6556	0.6	0.5149	18.7	0.0659	18.7	1	411.6	74.5	421.7	64.6	477.5	13.9	411.6	74.5	86.2	
08KH10-43	933	106961	1.7	17.6794	1.2	0.5823	2.4	0.0747	2.1	0.87	464.2	9.3	465.9	8.8	474.5	25.5	464.2	9.3	97.8	
08KH10-44	291	1712	0.8	11.9975	87.6	0.0663	93.4	0.0058	32.5	0.35	37.1	12	65.1	59	1277.4	43.3	37.1	12	NA	
08KH10-45	265	2984	1.9	20.0399	16.2	0.0507	17.7	0.0074	7.1	0.4	47.3	3.4	50.2	8.7	190.4	378.7	47.3	3.4	NA	
08KH10-46	651	112604	1.3	17.6569	1.5	0.6011	2.1	0.077	1.4	0.7	478.1	6.7	477.9	7.9	477.3	32.6	478.1	6.7	100.2	
08KH10-48	590	19880	1.1	17.6934	1.8	0.5849	5.5	0.0751	5.2	0.95	466.6	23.6	467.6	20.7	472.8	39.2	466.6	23.6	98.7	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-49	216	35644	0.7	16.7984	2.6	0.7718	4.5	0.094	3.7	0.82	579.4	20.4	580.8	20	586.5	56.9	579.4	20.4	98.8	
08KH10-50	62	25729	0.4	12.4181	4.6	2.1589	10.4	0.1944	9.3	0.9	1145.4	97.8	1167.9	72.3	1210	90.9	1210	90.9	94.7	
08KH10-51	3803	30570	0.7	20.8048	3.2	0.0336	4	0.0051	2.4	0.6	32.6	0.8	33.5	1.3	102.5	75.7	32.6	0.8	NA	
08KH10-52	262	4424	1.5	24.6552	42.8	0.0412	43.2	0.0074	5.9	0.14	47.3	2.8	41	17.4	-315.2	1143.3	47.3	2.8	NA	
08KH10-53	537	9102	0.9	21.3736	14.7	0.0472	15	0.0073	2.8	0.19	47	1.3	46.8	6.9	38.3	354	47	1.3	NA	
08KH10-54	554	9099	0.7	22.9316	14.6	0.0455	15	0.0076	3.2	0.21	48.6	1.5	45.2	6.6	-132.8	363.1	48.6	1.5	NA	
08KH10-55	2204	29874	4.8	21.6443	4.8	0.0483	5.7	0.0076	3.1	0.54	48.7	1.5	47.9	2.7	8.1	116	48.7	1.5	NA	
08KH10-56	224	88	2.5	6.0053	82.7	0.1696	91.2	0.0074	38.5	0.42	47.4	18.2	159.1	135.1	2522.9	725	47.4	18.2	NA	
08KH10-57	432	8107	1.6	24.3148	19.3	0.0425	19.9	0.0075	4.7	0.24	48.1	2.3	42.2	8.2	-279.7	494.9	48.1	2.3	NA	
08KH10-58	351	45158	1.5	17.3942	1.6	0.5949	3.2	0.075	2.8	0.86	466.5	12.5	474	12.2	510.4	35.6	466.5	12.5	91.4	
08KH10-59	192	41049	1.4	17.3085	4.2	0.6063	4.5	0.0761	1.5	0.34	472.9	6.9	481.2	17.3	521.2	93.2	472.9	6.9	90.7	
08KH10-60	471	8561	1.2	23.0212	24.9	0.0454	25.3	0.0076	4	0.16	48.6	2	45	11.1	-142.4	625.9	48.6	2	NA	
08KH10-61	1414	33150	1.7	21.6662	11.1	0.049	11.5	0.0077	2.9	0.25	49.5	1.4	48.6	5.4	5.7	268.1	49.5	1.4	NA	
08KH10-62	477	7780	0.9	17.6238	1.6	0.5599	3	0.0716	2.5	0.84	445.6	10.8	451.5	10.9	481.5	35.9	445.6	10.8	92.5	
08KH10-63	400	37981	1	17.7497	2.3	0.5778	2.9	0.0744	1.9	0.63	462.5	8.3	463	10.9	465.8	50.2	462.5	8.3	99.3	
08KH10-64	503	17083	1.8	19.9776	11.2	0.0528	11.8	0.0076	3.6	0.3	49.1	1.7	52.2	6	197.6	261.6	49.1	1.7	NA	
08KH10-65	233	24174	1.3	16.9529	4.7	0.6217	7.4	0.0764	5.7	0.77	474.8	26	490.9	28.6	566.6	102	474.8	26	83.8	
08KH10-66	220	2922	0.8	3.8886	637	0.177	637	0.005	13.2	0.02	32.1	4.2	165.5	1951	3229.4	358.3	32.1	4.2	NA	
08KH10-67	422	45490	1	17.5555	2.3	0.5838	4.4	0.0743	3.7	0.85	462.2	16.7	466.9	16.4	490.1	50.4	462.2	16.7	94.3	
08KH10-68	518	73875	2.8	17.485	2.4	0.537	5.4	0.0681	4.8	0.89	424.7	19.7	436.5	19	498.9	52.8	424.7	19.7	85.1	
08KH10-69	966	58925	2.2	17.6072	1.3	0.5524	3.9	0.0705	3.6	0.94	439.4	15.4	446.5	14	483.6	29.3	439.4	15.4	90.9	
08KH10-70	362	88022	1.1	17.4369	2.1	0.622	5	0.0787	4.5	0.91	488.1	21.2	491.1	19.4	505	46.5	488.1	21.2	96.7	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-71	577	10649	1.4	21.1283	19.1	0.0494	20	0.0076	5.8	0.29	48.6	2.8	48.9	9.6	65.9	459.2	48.6	2.8	NA	
08KH10-72	206	1748	1.6	13.4172	24.6	0.0765	26.5	0.0074	9.9	0.37	47.8	4.7	74.9	19.1	1055.9	502.8	47.8	4.7	NA	
08KH10-73	1045	34393	1.4	23.7246	18.1	0.0339	18.4	0.0058	3.1	0.17	37.4	1.1	33.8	6.1	-217.5	458.9	37.4	1.1	NA	
08KH10-74	119	4023	0.5	15.9736	11.7	0.6476	12.1	0.075	2.9	0.24	466.4	13.1	507	48.2	694.8	250.5	466.4	13.1	67.1	
08KH10-75	187	52671	0.9	16.9753	4.4	0.6191	5	0.0762	2.2	0.45	473.5	10.2	489.3	19.3	563.7	96.6	473.5	10.2	84	
08KH10-76	85	1410	1.6	8.8452	161	0.1138	162.9	0.0073	26.4	0.16	46.9	12.3	109.4	170.5	1849.1	73.3	46.9	12.3	NA	
08KH10-77	1075	18054	2.2	20.9193	9.8	0.0485	10.4	0.0074	3.7	0.35	47.3	1.7	48.1	4.9	89.5	232.2	47.3	1.7	NA	
08KH10-78	419	626	0.6	13.5418	41	0.0457	43.5	0.0045	14.5	0.33	28.9	4.2	45.4	19.3	1037.2	864.9	28.9	4.2	NA	
08KH10-79	741	8651	2.4	19.5639	22.8	0.0433	23	0.0061	3.2	0.14	39.5	1.2	43	9.7	246	530.5	39.5	1.2	NA	
08KH10-80	417	17392	4.7	22.9453	19.3	0.0553	19.7	0.0092	3.5	0.18	59.1	2.1	54.7	10.5	-134.2	482.3	59.1	2.1	NA	
08KH10-81	1328	10022	20	23.5178	11.9	0.0277	13.9	0.0047	7.2	0.51	30.4	2.2	27.8	3.8	-195.6	299.1	30.4	2.2	NA	
08KH10-82	227	25892	1.2	17.4713	3.9	0.5227	5.7	0.0662	4.1	0.72	413.4	16.3	426.9	19.7	500.7	86.2	413.4	16.3	82.6	
08KH10-83	269	89370	1.1	17.6949	3.2	0.6193	5.8	0.0795	4.8	0.83	493	22.7	489.4	22.5	472.6	71.8	493	22.7	104.3	
08KH10-84	1482	112683	1.7	17.631	0.6	0.5665	3.2	0.0724	3.2	0.98	450.8	13.8	455.7	11.8	480.6	12.7	450.8	13.8	93.8	
08KH10-85	424	39271	0.8	17.641	1.8	0.6131	4.1	0.0784	3.6	0.89	486.8	17	485.5	15.7	479.3	40.3	486.8	17	101.6	
08KH10-86	172	21257	0.7	17.1011	7.4	0.5975	7.6	0.0741	1.6	0.21	460.8	7.1	475.6	28.8	547.6	162.3	460.8	7.1	84.2	
08KH10-87	4632	41507	13.6	20.5531	3.3	0.0321	4.5	0.0048	3	0.68	30.8	0.9	32.1	1.4	131.2	77.5	30.8	0.9	NA	
08KH10-88	699	6868	1	23.9757	18.3	0.0278	19.5	0.0048	6.9	0.36	31.1	2.2	27.9	5.4	-244.1	464.5	31.1	2.2	NA	
08KH10-90	492	3740	0.7	22.6861	35.8	0.0289	36.4	0.0048	6.7	0.18	30.6	2	28.9	10.4	-106.2	906.3	30.6	2	NA	
08KH10-91	240	3934	0.6	3.1851	846	0.2047	845.6	0.0047	11.1	0.01	30.4	3.4	189.1	#####	3540.5	428.8	30.4	3.4	NA	
08KH10-92	778	60682	1.2	17.5247	1.4	0.6088	2.4	0.0774	2	0.83	480.5	9.3	482.8	9.3	493.9	29.8	480.5	9.3	97.3	
08KH10-93	137	2104	1.4	9.538	262	0.1081	262.1	0.0075	17.1	0.07	48	8.2	104.2	265.4	1711.6	632	48	8.2	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-94	692	5158	1.5	21.9269	19.1	0.0491	19.2	0.0078	2.4	0.12	50.2	1.2	48.7	9.1	-23.1	465.6	50.2	1.2	NA	
08KH10-95	313	45184	1	17.5131	3.4	0.5972	5.3	0.0758	4.1	0.77	471.3	18.6	475.4	20.2	495.4	75.2	471.3	18.6	95.1	
08KH10-97	581	5304	2.4	20.491	38	0.035	38.2	0.0052	3.9	0.1	33.5	1.3	35	13.1	138.3	922.5	33.5	1.3	NA	
08KH10-99	124	3284	0.8	17.0435	8	0.5736	8.7	0.0709	3.4	0.39	441.6	14.7	460.3	32.2	555	174.5	441.6	14.7	79.6	
08KH10-100	826	19539	2.1	20.6826	9.6	0.0503	10.7	0.0076	4.8	0.45	48.5	2.3	49.9	5.2	116.4	225.7	48.5	2.3	NA	
08KH10-101	527	4836	0.8	25.0925	16.8	0.0317	18	0.0058	6.3	0.35	37.1	2.3	31.7	5.6	-360.5	437.6	37.1	2.3	NA	
08KH10-102	379	726	2.4	22.237	74.4	0.0384	74.7	0.0062	6.4	0.09	39.8	2.5	38.2	28.1	-57.3	2133.3	39.8	2.5	NA	
08KH10-103	794	13255	1	22.2388	17.1	0.0335	17.7	0.0054	4.6	0.26	34.7	1.6	33.4	5.8	-57.5	420.2	34.7	1.6	NA	
08KH10-104	230	15886	0.9	17.9657	6.5	0.5674	14	0.0739	12.4	0.89	459.8	55	456.3	51.5	438.9	145.2	459.8	55	104.8	
08KH10-105	866	8336	0.4	24.6856	27.9	0.0308	28.2	0.0055	3.8	0.13	35.4	1.3	30.8	8.5	-318.4	728.6	35.4	1.3	NA	
08KH10-106	354	3810	2.2	17.1611	45	0.0513	51.5	0.0064	24.9	0.48	41	10.2	50.8	25.5	540	1035.3	41	10.2	NA	
08KH10-107	165	4865	1.7	22.9298	78.1	0.0472	78.6	0.0079	8.3	0.11	50.4	4.2	46.9	36	-132.6	2327.4	50.4	4.2	NA	
08KH10-108	1281	32021	3.6	21.6218	6.6	0.0479	6.9	0.0075	2.1	0.3	48.3	1	47.5	3.2	10.7	159.3	48.3	1	NA	
08KH10-109	295	68314	1.1	17.2406	2.7	0.63	3.9	0.0788	2.9	0.73	488.8	13.4	496.1	15.4	529.9	58.7	488.8	13.4	92.3	
08KH10-110	861	6190	0.9	18.7244	9.3	0.0353	10.4	0.0048	4.7	0.46	30.8	1.5	35.2	3.6	346.1	209.8	30.8	1.5	NA	
08KH10-111	760	18684	1	21.3595	12.5	0.0465	13.4	0.0072	4.7	0.35	46.2	2.1	46.1	6	40	300.4	46.2	2.1	NA	
08KH10-112	154	82103	2.2	10.0778	1.4	3.6827	2.4	0.2692	2	0.83	1536.6	27.6	1567.6	19.5	1609.6	25.8	1609.6	25.8	95.5	
08KH10-113	278	67645	1	17.8729	4.6	0.5443	5.8	0.0705	3.6	0.62	439.5	15.3	441.2	20.8	450.4	101.6	439.5	15.3	97.6	
08KH10-114	172	1927	1.2	16.1506	11.4	0.6235	11.7	0.073	2.7	0.23	454.4	11.9	492	45.8	671.2	245	454.4	11.9	67.7	
08KH10-115	433	119718	1.4	17.632	2	0.5867	3.6	0.075	2.9	0.83	466.4	13.2	468.8	13.3	480.4	44.2	466.4	13.2	97.1	
08KH10-117	289	5424	1.4	22.1419	29.2	0.0477	30.1	0.0077	7.1	0.24	49.2	3.5	47.3	13.9	-46.8	724	49.2	3.5	NA	
08KH10-118	703	6140	0.7	20.8435	27.1	0.0326	28	0.0049	7.2	0.26	31.7	2.3	32.6	9	98.1	651.3	31.7	2.3	NA	

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Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-119	810	12301	2	24.1464	10.9	0.0425	11.2	0.0074	2.2	0.2	47.8	1.1	42.3	4.6	-262	277.9	47.8	1.1	NA	
08KH10-120	1983	16047	37.7	19.4111	2.6	0.066	8.4	0.0093	8	0.95	59.6	4.8	64.9	5.3	264	58.8	59.6	4.8	NA	
08KH10-1 b	575	1984	0.8	16.3987	24.2	0.068	24.5	0.0081	4.2	0.17	51.9	2.2	66.8	15.9	638.6	526.8	51.9	2.2	NA	
08KH10-2 b	951	15584	59.1	20.9132	23.4	0.0321	23.6	0.0049	2.7	0.12	31.3	0.9	32.1	7.4	90.2	561.1	31.3	0.9	NA	
08KH10-3 b	698	22910	4.1	20.7877	3.7	0.0945	13.8	0.0142	13.3	0.96	91.2	12.1	91.7	12.1	104.4	87.5	91.2	12.1	NA	
08KH10-4 b	697	31776	1.2	21.6429	8.4	0.0494	9.2	0.0078	3.8	0.41	49.8	1.9	49	4.4	8.3	201.6	49.8	1.9	NA	
08KH10-5 b	1566	70087	11.2	21.9148	5	0.0446	5.1	0.0071	1.2	0.23	45.5	0.5	44.3	2.2	-21.8	120.8	45.5	0.5	NA	
08KH10-6 b	478	12849	1.5	20.3653	13.1	0.0513	13.5	0.0076	3	0.22	48.7	1.5	50.8	6.7	152.8	309	48.7	1.5	NA	
08KH10-7 b	4167	16794	0.7	17.3172	2.5	0.1904	84	0.0239	84	1	152.3	126.4	177	137.3	520.1	55.5	152.3	126.4	NA	
08KH10-8 b	120	28631	0.6	17.622	8.1	0.601	8.6	0.0768	2.8	0.32	477.1	12.8	477.9	32.8	481.7	180.1	477.1	12.8	99	
08KH10-9 b	1626	18090	1.2	20.7488	5.6	0.0603	7.5	0.0091	5	0.67	58.3	2.9	59.5	4.3	108.9	131.8	58.3	2.9	NA	
08KH10-10 b	148	123245	3.1	11.6035	1.4	2.4566	3	0.2067	2.6	0.88	1211.4	28.8	1259.4	21.4	1342.2	27.5	1342.2	27.5	90.3	
08KH10-11 b	352	9309	2.5	25.2012	16.8	0.0466	17.2	0.0085	3.9	0.23	54.7	2.1	46.3	7.8	-371.7	436.9	54.7	2.1	NA	
08KH10-12 b	905	10329	25.5	22.9889	14.2	0.0299	15	0.005	4.9	0.32	32.1	1.6	29.9	4.4	-138.9	352.7	32.1	1.6	NA	
08KH10-14 b	196	4056	0.9	19.6078	36.2	0.0528	37	0.0075	7.4	0.2	48.2	3.6	52.3	18.8	240.8	861.2	48.2	3.6	NA	
08KH10-15 b	1283	40159	1.6	22.1238	5.8	0.0467	6.2	0.0075	2.4	0.38	48.1	1.1	46.3	2.8	-44.8	140.5	48.1	1.1	NA	
08KH10-16 b	1204	27928	1	20.1534	4.3	0.0521	4.5	0.0076	1.2	0.26	48.9	0.6	51.5	2.2	177.2	100.6	48.9	0.6	NA	
08KH10-17 b	538	103222	0.9	17.5156	1.5	0.6094	2.1	0.0774	1.4	0.7	480.7	6.7	483.2	8	495.1	33	480.7	6.7	97.1	
08KH10-18 b	1038	47360	0.6	17.4398	0.8	0.5408	17.2	0.0684	17.2	1	426.6	71.1	439	61.5	504.7	17.7	426.6	71.1	84.5	
08KH10-19 b	438	101851	1.5	17.5523	2	0.5457	2.6	0.0695	1.7	0.65	433	7.2	442.2	9.4	490.5	44.1	433	7.2	88.3	
08KH10-20 b	447	4968	6.5	25.0398	27.8	0.0423	27.9	0.0077	2.5	0.09	49.3	1.2	42	11.5	-355	730.9	49.3	1.2	NA	
08KH10-21 b	2225	41499	20.8	22.2156	6.8	0.0329	6.9	0.0053	1.4	0.2	34	0.5	32.8	2.2	-54.9	164.7	34	0.5	NA	
08KH10-22 b	5190	17080	18.9	21.1911	2	0.0445	16.8	0.0068	16.7	0.99	43.9	7.3	44.2	7.3	58.9	46.6	43.9	7.3	NA	

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Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-23 b	869	15359	1.6	21.492	12.4	0.0471	12.5	0.0073	1.7	0.14	47.2	0.8	46.8	5.7	25.1	298.1	47.2	0.8	NA	
08KH10-24 b	1445	43562	3.2	23.2495	7.6	0.0328	9.5	0.0055	5.6	0.59	35.6	2	32.8	3.1	-166.9	190.2	35.6	2	NA	
08KH10-25 b	1778	59214	14.6	21.0055	3.2	0.0466	4	0.0071	2.4	0.59	45.6	1.1	46.3	1.8	79.7	76.6	45.6	1.1	NA	
08KH10-26 b	2385	1037323	16.6	15.1012	0.3	1.1345	3.4	0.1243	3.3	0.99	755	23.8	769.9	18.1	813.4	7.1	755	23.8	92.8	
08KH10-27 b	347	45654	2.4	20.4266	6.2	0.1814	6.5	0.0269	1.7	0.27	170.9	2.9	169.2	10.1	145.7	146.5	170.9	2.9	NA	
08KH10-28 b	775	11596	3.1	23.3508	20.8	0.0288	21	0.0049	2.6	0.12	31.4	0.8	28.9	6	-177.7	523.5	31.4	0.8	NA	
08KH10-29 b	88	39505	1.8	10.4111	1.4	2.9811	2.7	0.2251	2.4	0.86	1308.7	27.9	1402.8	20.8	1548.8	26.1	1548.8	26.1	84.5	
08KH10-30 b	266	2538	1.3	25.2827	48.4	0.0269	49.7	0.0049	11.2	0.23	31.8	3.6	27	13.2	-380.1	1325.7	31.8	3.6	NA	
08KH10-31 b	296	1726	1.9	21.7366	26.9	0.0474	27.4	0.0075	5.6	0.2	48	2.7	47	12.6	-2.1	658.1	48	2.7	NA	
08KH10-32 b	531	177779	1.1	17.5352	0.8	0.5961	1.8	0.0758	1.7	0.91	471.1	7.6	474.8	7	492.6	16.8	471.1	7.6	95.6	
08KH10-33 b	368	83506	1.3	17.5186	1.8	0.5953	2.2	0.0756	1.2	0.55	470	5.6	474.3	8.4	494.7	40.6	470	5.6	95	
08KH10-34 b	885	11253	0.3	21.7459	14.7	0.0306	15.2	0.0048	3.8	0.25	31	1.2	30.6	4.6	-3.1	356.9	31	1.2	NA	
08KH10-35 b	190	2651	0.5	16.5808	171	0.0395	171.4	0.0047	11.9	0.07	30.5	3.6	39.3	66.2	614.7	1095.8	30.5	3.6	NA	
08KH10-36 b	307	6800	2.7	31.0666	40.6	0.0314	40.9	0.0071	5	0.12	45.4	2.3	31.4	12.6	-947.6	1229.1	45.4	2.3	NA	
08KH10-37 b	116	20991	0.6	18.1714	5.5	0.5779	5.8	0.0762	1.9	0.32	473.2	8.5	463.1	21.5	413.5	122.5	473.2	8.5	114.4	
08KH10-38 b	2477	46605	2.5	21.2151	4.1	0.0322	4.4	0.005	1.6	0.36	31.8	0.5	32.2	1.4	56.2	98.7	31.8	0.5	NA	
08KH10-39 b	350	9281	1.5	19.0908	14.2	0.0534	15.1	0.0074	5.2	0.34	47.5	2.4	52.8	7.8	302.1	325.9	47.5	2.4	NA	
08KH10-40 b	2177	119914	3.5	17.5429	0.3	0.5541	3.1	0.0705	3.1	0.99	439.2	13.2	447.7	11.3	491.7	7.2	439.2	13.2	89.3	
08KH10-41 b	1072	13712	7.8	22.1848	10.6	0.0309	10.9	0.005	2.1	0.19	31.9	0.7	30.9	3.3	-51.5	259.8	31.9	0.7	NA	
08KH10-42 b	517	10832	2.7	23.9665	11.7	0.0425	11.8	0.0074	1.9	0.16	47.5	0.9	42.3	4.9	-243.1	296.1	47.5	0.9	NA	
08KH10-44 b	1280	34932	3.3	21.442	10.6	0.0352	10.7	0.0055	1.5	0.14	35.2	0.5	35.1	3.7	30.7	254	35.2	0.5	NA	
08KH10-45 b	625	111314	6.7	14.8901	0.8	0.5031	5.8	0.0543	5.7	0.99	341.1	18.9	413.8	19.6	842.7	17.3	341.1	18.9	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH10-46 b	175	4691	1.2	20.7205	46.1	0.057	47.5	0.0086	11.2	0.24	55	6.1	56.3	26	112.1	1144.9	55	6.1	NA	
08KH10-47 b	1599	166101	0.7	17.4795	0.7	0.5598	2.1	0.071	2	0.94	442	8.4	451.4	7.6	499.6	15.2	442	8.4	88.5	
08KH10-48 b	3003	47909	2.2	20.7631	2.3	0.0511	2.5	0.0077	1	0.39	49.4	0.5	50.6	1.2	107.3	53.6	49.4	0.5	NA	
08KH10-49 b	1549	21674	6.9	20.6236	6.8	0.0317	7.4	0.0047	2.9	0.39	30.5	0.9	31.7	2.3	123.1	160.6	30.5	0.9	NA	
08KH10-50 b	2757	37310	0.5	20.6213	3.8	0.0341	4.2	0.0051	1.8	0.44	32.8	0.6	34.1	1.4	123.4	89.1	32.8	0.6	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH31-1	102	11869	1.8	10.6682	2.5	2.4035	4.3	0.186	3.5	0.82	1099.5	35.3	1243.7	30.7	1502.8	46.8	1502.8	46.8	73.2	
08KH31-2	169	31006	0.8	17.2612	5.8	0.6449	7.8	0.0807	5.1	0.66	500.5	24.7	505.3	31	527.3	128.1	500.5	24.7	94.9	
08KH31-3	1263	325029	1.7	17.5685	0.7	0.6078	2	0.0774	1.8	0.94	480.9	8.5	482.2	7.5	488.4	15.2	480.9	8.5	98.5	
08KH31-4	167	32999	0.9	17.6713	4.7	0.6099	5.2	0.0782	2.2	0.41	485.2	10.1	483.5	20	475.5	104.8	485.2	10.1	102	
08KH31-5	628	190715	8	14.5372	0.8	1.1702	2.2	0.1234	2	0.94	750	14.4	786.7	11.9	892.4	15.8	750	14.4	84	
08KH31-6	210	115088	0.9	12.7604	1.3	2.0441	1.8	0.1892	1.2	0.67	1116.9	12.1	1130.3	12.1	1156.2	26.3	1156.2	26.3	96.6	
08KH31-7	121	30162	0.8	12.6804	2.7	2.1469	3.2	0.1974	1.6	0.51	1161.6	17.1	1164	22	1168.6	54.1	1168.6	54.1	99.4	
08KH31-8	106	28461	0.4	12.7884	2.1	2.0197	2.5	0.1873	1.3	0.51	1106.9	12.8	1122.2	16.8	1151.8	42.3	1151.8	42.3	96.1	
08KH31-9	338	8257	1.7	23.3822	21.7	0.0652	22.9	0.0111	7.5	0.33	70.9	5.3	64.1	14.2	-181.1	546.2	70.9	5.3	NA	
08KH31-10	613	133889	1.9	10.5705	0.5	2.5999	4.6	0.1993	4.5	0.99	1171.6	48.6	1300.6	33.5	1520.2	10	1520.2	10	77.1	
08KH31-11	157	16583	1.2	17.2135	5.3	0.6303	5.5	0.0787	1.5	0.27	488.3	6.9	496.3	21.6	533.3	116.5	488.3	6.9	91.6	
08KH31-12	389	55011	0.7	17.6917	2.1	0.5971	2.9	0.0766	2	0.69	475.9	9	475.4	10.9	473	46.1	475.9	9	100.6	
08KH31-13	153	65132	4.6	12.7164	1.6	2.1299	1.8	0.1964	0.9	0.51	1156.1	9.9	1158.6	12.7	1163	31.4	1163	31.4	99.4	
08KH31-14	421	79598	6.1	17.41	1.8	0.6176	2.4	0.078	1.6	0.67	484	7.6	488.3	9.4	508.4	39.6	484	7.6	95.2	
08KH31-15	62	67249	0.5	10.2761	3.5	3.1669	13.2	0.236	12.7	0.96	1366	156.3	1449.1	101.9	1573.2	65.3	1573.2	65.3	86.8	
08KH31-16	404	27261	2.4	13.2328	0.8	1.6198	1.2	0.1555	0.9	0.75	931.5	7.8	977.9	7.6	1083.7	16	1083.7	16	86	
08KH31-17	240	9752	1.1	21.3147	19.3	0.173	19.4	0.0267	1.7	0.09	170.1	2.9	162	29.1	44.9	465.5	170.1	2.9	NA	
08KH31-18	422	85429	4.6	12.6487	1	1.9724	1.7	0.1809	1.4	0.8	1072.1	13.6	1106.1	11.6	1173.6	20.6	1173.6	20.6	91.4	
08KH31-19	466	23489	1.2	14.519	1.5	1.1139	12.6	0.1173	12.5	0.99	715	84.8	760	67.6	895	31.1	715	84.8	79.9	
08KH31-20	52	5319	1	14.0668	4.7	1.529	6	0.156	3.6	0.61	934.5	31.4	942.1	36.5	960	96.7	934.5	31.4	97.3	
08KH31-21	285	7197	0.6	27.1593	32.3	0.0581	32.6	0.0115	4.1	0.13	73.4	3	57.4	18.2	-569.7	891.8	73.4	3	NA	
08KH31-22	211	108828	1.8	9.8819	1.9	3.2464	4.2	0.2327	3.8	0.89	1348.5	46.1	1468.3	32.9	1646.1	35.4	1646.1	35.4	81.9	
08KH31-23	429	9085	1.3	22.6268	25.5	0.0701	25.7	0.0115	3.3	0.13	73.7	2.4	68.8	17.1	-99.8	635.2	73.7	2.4	NA	
08KH31-24	187	4100	1.3	22.9822	49.5	0.0433	50.4	0.0072	9.6	0.19	46.3	4.4	43	21.2	-138.2	1297.8	46.3	4.4	NA	
08KH31-25	2558	63802	0.8	21.2261	2.5	0.077	3.1	0.0119	1.7	0.56	76	1.3	75.3	2.2	54.9	60.8	76	1.3	NA	
08KH31-26	279	48545	1.3	17.6359	1.9	0.5922	4.4	0.0757	4	0.9	470.7	18.2	472.3	16.8	480	42.3	470.7	18.2	98.1	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH31-27	497	15297	0.9	22.1659	12.7	0.0726	12.8	0.0117	1.7	0.13	74.8	1.2	71.2	8.8	-49.5	309	74.8	1.2	NA	
08KH31-28	140	63113	1.6	13.5824	2	1.735	2.3	0.1709	1.2	0.51	1017.1	11.1	1021.6	15	1031.2	40.6	1031.2	40.6	98.6	
08KH31-29	275	19695	1.3	17.0189	5.6	0.5841	21.2	0.0721	20.5	0.96	448.8	88.8	467.1	79.7	558.2	122.6	448.8	88.8	80.4	
08KH31-30	315	47027	1	13.6668	1.3	1.5819	4.7	0.1568	4.6	0.96	939	39.9	963.1	29.5	1018.6	26.3	939	39.9	92.2	
08KH31-31	224	125478	2.3	13.634	1.6	1.6539	2.1	0.1635	1.3	0.64	976.4	12	991	13.2	1023.5	32.5	976.4	12	95.4	
08KH31-32	2063	87047	2.4	21.1027	4.5	0.0742	5.2	0.0114	2.6	0.5	72.8	1.9	72.6	3.6	68.8	106.4	72.8	1.9	NA	
08KH31-33	40	23546	1.6	10.2273	3.1	3.6059	3.9	0.2675	2.3	0.58	1527.9	30.9	1550.8	30.8	1582.2	58.9	1582.2	58.9	96.6	
08KH31-34	466	13527	0.9	19.0583	11.2	0.0865	11.6	0.012	2.9	0.25	76.6	2.2	84.2	9.4	306	256.9	76.6	2.2	NA	
08KH31-35	263	8826	3.4	22.1956	17.6	0.0869	27.2	0.014	20.7	0.76	89.6	18.4	84.6	22.1	-52.7	432.4	89.6	18.4	NA	
08KH31-36	94	17046	1.9	16.1478	7.7	0.8557	10.2	0.1002	6.8	0.66	615.7	39.9	627.8	48	671.6	164	615.7	39.9	91.7	
08KH31-37	116	60735	0.9	12.322	1.2	2.3355	3.9	0.2087	3.7	0.95	1222	41.4	1223.2	27.8	1225.2	23.7	1225.2	23.7	99.7	
08KH31-38	168	81305	1.8	13.0199	1.5	1.9583	2.2	0.1849	1.6	0.72	1093.8	15.6	1101.3	14.6	1116.2	30.2	1116.2	30.2	98	
08KH31-39	775	18181	1.4	21.4372	6.1	0.0748	6.6	0.0116	2.4	0.37	74.5	1.8	73.2	4.6	31.2	146	74.5	1.8	NA	
08KH31-40	299	7604	1.2	22.8271	16.8	0.1064	17.1	0.0176	3.3	0.19	112.5	3.7	102.6	16.7	-121.5	416.6	112.5	3.7	NA	
08KH31-41	511	13443	1	20.3223	11.8	0.0785	12.1	0.0116	2.4	0.2	74.1	1.8	76.7	8.9	157.7	277.6	74.1	1.8	NA	
08KH31-42	791	23855	1.3	20.1355	4.8	0.1227	5.2	0.0179	2	0.38	114.5	2.3	117.5	5.8	179.2	112.7	114.5	2.3	NA	
08KH31-43	795	20509	1.9	18.0798	5.7	0.0989	9.6	0.013	7.8	0.8	83.1	6.4	95.8	8.8	424.8	127.9	83.1	6.4	NA	
08KH31-44	395	8611	5.4	51.187	91.7	0.0178	91.9	0.0066	5.4	0.06	42.5	2.3	17.9	16.3	NA	NA	42.5	2.3	NA	
08KH31-45	3591	74674	4.6	21.473	4	0.0489	4.3	0.0076	1.7	0.39	48.9	0.8	48.5	2.1	27.3	95.9	48.9	0.8	NA	
08KH31-46	539	201134	3.3	16.9615	1.4	0.7406	2.3	0.0911	1.8	0.8	562.1	9.9	562.8	9.8	565.5	29.6	562.1	9.9	99.4	
08KH31-46	78	16659	0.5	12.822	2.5	2.0427	6.3	0.19	5.8	0.92	1121.1	59.6	1129.9	43.2	1146.6	50.6	1146.6	50.6	97.8	
08KH31-47	283	188458	1.4	9.8851	0.6	3.7651	2.5	0.2699	2.4	0.96	1540.5	32.5	1585.3	19.8	1645.5	12	1645.5	12	93.6	
08KH31-49	416	170259	1.5	13.4758	1.1	1.7082	1.6	0.1669	1.2	0.75	995.3	11.1	1011.6	10.2	1047.1	21.2	1047.1	21.2	95	
08KH31-50	433	72632	1.2	12.6286	1.2	2.0641	4.7	0.1891	4.5	0.97	1116.3	46.5	1137	32.1	1176.8	23.8	1176.8	23.8	94.9	
08KH31-51	141	87504	1.2	10.2844	1	3.7139	1.8	0.277	1.5	0.83	1576.3	20.4	1574.4	14.1	1571.7	18.7	1571.7	18.7	100.3	
08KH31-52	344	142172	0.8	12.6472	0.6	2.1051	1.7	0.1931	1.6	0.93	1138.1	16.8	1150.5	11.9	1173.9	12.3	1173.9	12.3	97	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH31-53	377	5572	1.2	22.3083	47.6	0.0519	47.8	0.0084	4.2	0.09	53.9	2.3	51.4	23.9	-65.1	1224	53.9	2.3	NA	
08KH31-54	143	4730	1.2	29.1469	34.4	0.0922	35	0.0195	6.3	0.18	124.5	7.7	89.6	30	-764.4	992.1	124.5	7.7	NA	
08KH31-55	55	1110	0.7	17.2579	103	0.1059	104	0.0133	16.7	0.16	84.9	14	102.2	101.4	527.7	654.2	84.9	14	NA	
08KH31-56	121	15969	2.2	17.3355	10.9	0.7015	14.2	0.0882	9.1	0.64	544.9	47.6	539.7	59.7	517.8	241	544.9	47.6	105.2	
08KH31-57	264	156917	2.2	14.2271	1.8	1.3879	3.5	0.1432	3	0.86	862.8	24.1	883.8	20.6	936.8	36.8	862.8	24.1	92.1	
08KH31-59	328	50764	1.5	17.7977	2.4	0.5935	2.9	0.0766	1.6	0.55	475.8	7.2	473.1	10.8	459.8	53.1	475.8	7.2	103.5	
08KH31-60	576	12517	2.8	11.0513	1.5	2.888	3.3	0.2315	3	0.89	1342.3	35.8	1378.8	25.1	1435.8	29.3	1435.8	29.3	93.5	
08KH31-61	2274	36253	26.7	23.3232	12.9	0.023	13.5	0.0039	3.8	0.28	25	0.9	23.1	3.1	-174.8	323.3	25	0.9	NA	
08KH31-62	186	50793	1.2	12.6995	0.9	2.1368	1.9	0.1968	1.6	0.88	1158.2	17.3	1160.8	12.9	1165.7	17.6	1165.7	17.6	99.4	
08KH31-63	420	115355	0.9	17.462	2.1	0.7233	2.7	0.0916	1.7	0.62	565	9	552.6	11.5	501.8	46.8	565	9	112.6	
08KH31-64	57	3122	1.1	-7.7601	267	-0.2058	267.7	0.0116	21.2	0.08	74.2	15.6	-233.9	-868	NA	NA	74.2	15.6	NA	
08KH31-65	247	13682	1.4	12.6345	1.6	2.1102	3.3	0.1934	2.8	0.87	1139.6	29.6	1152.2	22.5	1175.9	32.3	1175.9	32.3	96.9	
08KH31-66	43	17427	1	12.5066	8.2	2.2588	13.2	0.2049	10.3	0.78	1201.5	113.4	1199.5	93.2	1195.9	161.9	1195.9	161.9	100.5	
08KH31-67	268	8424	1.3	21.444	13.1	0.0762	14	0.0118	4.9	0.35	75.9	3.7	74.6	10.1	30.5	315.6	75.9	3.7	NA	
08KH31-68	354	5717	3.3	22.8718	26.2	0.0474	27.3	0.0079	7.8	0.28	50.5	3.9	47	12.6	-126.3	656.9	50.5	3.9	NA	
08KH31-69	130	41466	1.5	9.8733	1.2	4.0359	1.7	0.289	1.2	0.69	1636.6	16.8	1641.5	13.6	1647.7	22.4	1647.7	22.4	99.3	
08KH31-70	195	60685	1.1	10.3773	0.8	3.4204	3.9	0.2574	3.8	0.98	1476.7	49.8	1509.1	30.3	1554.9	15	1554.9	15	95	
08KH31-71	38	8582	1.3	16.1853	21.4	0.7947	22.3	0.0933	6.1	0.27	575	33.5	593.8	100.5	666.6	463.9	575	33.5	86.2	
08KH31-73	1248	40572	1.3	20.476	3.5	0.0814	9.3	0.0121	8.6	0.92	77.5	6.6	79.5	7.1	140.1	83.4	77.5	6.6	NA	
08KH31-74	242	88675	1.5	17.6802	4.8	0.6211	5.7	0.0796	3	0.53	494	14.4	490.5	22.1	474.4	106.2	494	14.4	104.1	
08KH31-75	240	46893	1.5	17.7609	2.2	0.6013	2.7	0.0775	1.6	0.59	480.9	7.5	478.1	10.4	464.4	48.8	480.9	7.5	103.6	
08KH31-76	190	97078	0.9	9.8791	0.6	3.9793	4.8	0.2851	4.8	0.99	1617.1	68.3	1630	39	1646.7	10.2	1646.7	10.2	98.2	
08KH31-77	147	44100	0.6	13.461	1.5	1.8956	2.8	0.1851	2.3	0.84	1094.6	23.6	1079.6	18.5	1049.3	30.2	1049.3	30.2	104.3	
08KH31-78	426	5300	5.2	13.1864	4.3	1.4186	17.1	0.1357	16.6	0.97	820.1	127.7	896.8	102.3	1090.7	86.3	820.1	127.7	75.2	
08KH31-79	815	2489	0.8	17.2514	4.2	0.5517	10.9	0.069	10	0.92	430.3	41.8	446.1	39.2	528.5	91.4	430.3	41.8	81.4	
08KH31-81	111	2309	0.9	8.8421	158	0.1081	157.8	0.0069	7.1	0.05	44.5	3.2	104.3	157.6	1849.7	58.3	44.5	3.2	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH31-82	413	7232	1.3	23.1421	15.1	0.071	15.6	0.0119	4.1	0.26	76.4	3.1	69.7	10.5	-155.4	376.6	76.4	3.1	NA	
08KH31-83	379	5854	6.2	27.8829	30	0.0403	30.4	0.0082	4.5	0.15	52.4	2.3	40.2	12	-641.2	838.9	52.4	2.3	NA	
08KH31-84	509	17686	10.6	16.7279	5.6	0.2957	10.8	0.0359	9.3	0.86	227.2	20.8	263	25.1	595.6	120.4	227.2	20.8	NA	
08KH31-85	93	50438	1.4	10.2307	1.3	3.7986	2.8	0.2819	2.5	0.88	1600.7	35.4	1592.5	22.7	1581.5	24.6	1581.5	24.6	101.2	
08KH31-86	74	42694	1.3	11.3433	3.5	2.932	4.8	0.2412	3.3	0.69	1393	40.9	1390.2	36	1385.9	66.3	1385.9	66.3	100.5	
08KH31-88	775	8064	2.5	12.3229	1.8	2.2139	2.5	0.1979	1.7	0.68	1163.8	17.9	1185.4	17.4	1225.1	36.1	1225.1	36.1	95	
08KH31-89	537	105368	1.2	10.4372	0.4	2.5771	2.8	0.1951	2.8	0.99	1148.8	29.1	1294.2	20.4	1544.1	7	1544.1	7	74.4	
08KH31-90	538	26090	7.8	15.5874	3.8	0.524	9.7	0.0592	8.9	0.92	371	32.2	427.8	33.9	746.7	79.9	371	32.2	NA	
08KH31-92	902	13530	2.7	11.9801	1.1	2.1951	2.6	0.1907	2.4	0.9	1125.3	24.6	1179.5	18.4	1280.3	22.1	1280.3	22.1	87.9	
08KH31-93	1003	9999	8.1	19.6888	2.2	0.2335	2.6	0.0333	1.2	0.48	211.4	2.6	213.1	4.9	231.3	51.9	211.4	2.6	NA	
08KH31-95	223	57858	1.4	13.6285	1.2	1.7818	2.1	0.1761	1.7	0.81	1045.7	16.1	1038.8	13.5	1024.3	24.9	1024.3	24.9	102.1	
08KH31-96	212	6163	0.8	23.8858	37.3	0.0509	37.5	0.0088	3.6	0.1	56.6	2.1	50.4	18.4	-234.6	969.7	56.6	2.1	NA	
08KH31-97	371	201229	2.3	8.2413	0.3	4.7113	3	0.2816	3	0.99	1599.4	42.9	1769.2	25.5	1976	5.6	1976	5.6	80.9	
08KH31-98	240	44196	2.1	16.0332	2.5	0.6181	6	0.0719	5.4	0.91	447.4	23.5	488.7	23.3	686.9	54.2	447.4	23.5	65.1	
08KH31-99	2192	711168	39.3	9.9281	0.1	3.6955	1.5	0.2661	1.5	1	1520.9	19.9	1570.4	11.8	1637.5	1.2	1637.5	1.2	92.9	
08KH31-100	582	13851	0.9	19.311	15.9	0.0835	16.2	0.0117	2.9	0.18	75	2.2	81.4	12.7	275.9	367.3	75	2.2	NA	
08KH31-101	202	28608	6.6	16.0373	5	0.6458	6	0.0751	3.3	0.56	466.9	15	505.9	23.9	686.3	106.5	466.9	15	68	
08KH31-102	271	35091	0.8	17.7538	3.6	0.5876	4.6	0.0757	2.9	0.62	470.2	13	469.3	17.4	465.2	80.4	470.2	13	101.1	
08KH31-104	1120	10970	1.2	20.2761	9.8	0.0574	13.8	0.0084	9.7	0.71	54.1	5.3	56.6	7.6	163	229.1	54.1	5.3	NA	
08KH31-105	322	63288	5.5	16.9448	2.3	0.7568	4	0.093	3.2	0.8	573.3	17.4	572.2	17.3	567.7	51.1	573.3	17.4	101	
08KH31-106	63	123548	1.6	4.9022	0.6	15.334	1.6	0.5452	1.5	0.93	2805.1	34.8	2836.2	15.7	2858.4	9.8	2858.4	9.8	98.1	
08KH31-107	1301	75126	30.7	20.2654	3.1	0.1511	5.6	0.0222	4.7	0.84	141.6	6.6	142.9	7.5	164.2	71.7	141.6	6.6	NA	
08KH31-108	682	22103	4.3	14.4538	1.1	0.9302	6.7	0.0975	6.6	0.99	599.8	37.9	667.8	32.8	904.3	23.3	599.8	37.9	66.3	
08KH31-109	485	412094	6	12.0914	1	2.2125	8.7	0.194	8.7	0.99	1143.1	90.7	1185	61	1262.2	18.9	1262.2	18.9	90.6	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH31-110	1720	12401	2.9	21.0117	6.6	0.0504	6.9	0.0077	2.1	0.3	49.4	1	50	3.4	79	157.2	49.4	1	NA	
08KH31-111	592	8104	3.8	21.9072	28.8	0.0537	29	0.0085	3.6	0.12	54.7	2	53.1	15	-21	708.8	54.7	2	NA	
08KH31-112	861	394647	1.4	10.436	1	2.9649	1.6	0.2244	1.3	0.8	1305.1	15.6	1398.7	12.5	1544.3	18.5	1544.3	18.5	84.5	
08KH31-113	127	3581	1.5	3.5429	645	0.3402	645.1	0.0087	11.3	0.02	56.1	6.3	297.3	#####	3375.4	246.5	56.1	6.3	NA	
08KH31-114	188	18572	0.3	24.361	28.2	0.0629	28.5	0.0111	4.4	0.15	71.3	3.1	62	17.2	-284.5	730.6	71.3	3.1	NA	
08KH31-115	523	134207	4.1	12.8797	0.5	1.9294	2.5	0.1802	2.4	0.98	1068.2	24.1	1091.3	16.7	1137.7	9.6	1137.7	9.6	93.9	
08KH31-116	135	2186	1.4	22.4814	50.5	0.0521	51.7	0.0085	11.3	0.22	54.5	6.1	51.5	26	-84	1312.6	54.5	6.1	NA	
08KH31-117	577	46496	25.8	18.0744	17.5	0.0707	19.2	0.0093	8	0.42	59.5	4.7	69.4	12.9	425.4	392.3	59.5	4.7	NA	
08KH31-118	112	77408	1.7	8.179	0.7	6.4235	3.4	0.381	3.3	0.98	2081.1	59.5	2035.5	30.1	1989.5	13	1989.5	13	104.6	
08KH31-119	987	4998	13.1	12.7932	1.1	0.963	5.1	0.0894	5	0.98	551.7	26.3	684.9	25.3	1151.1	21	551.7	26.3	47.9	
08KH31-120	145	151636	0.3	9.243	1	4.7935	17.5	0.3213	17.4	1	1796.3	273.6	1783.8	147.8	1769.1	18.4	1769.1	18.4	101.5	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
08KH28-1	97	16692	0.6	17.5661	6.7	0.6103	6.8	0.0777	1.5	0.22	482.7	6.9	483.7	26.3	488.7	147.4	482.7	6.9	98.8		
08KH28-2	3208	78414	4.4	20.7747	1.8	0.0589	2.5	0.0089	1.8	0.7	56.9	1	58.1	1.4	105.9	42.5	56.9	1	NA		
08KH28-3	1132	13397	123.1	21.0487	11.4	0.0316	11.6	0.0048	2	0.17	31	0.6	31.6	3.6	74.9	271.9	31	0.6	NA		
08KH28-4	623	553850	9.9	9.8588	0.3	3.3929	1.9	0.2426	1.8	0.99	1400.2	23	1502.8	14.5	1650.5	5.6	1650.5	5.6	84.8		
08KH28-5	758	21949	2	20.9625	5.8	0.0633	6	0.0096	1.7	0.28	61.8	1.1	62.3	3.7	84.6	137.5	61.8	1.1	NA		
08KH28-6	1853	162002	1.1	17.4616	0.9	0.5986	3.7	0.0758	3.5	0.97	471	16.1	476.3	13.9	501.9	20.5	471	16.1	93.9		
08KH28-7	891	15401	2.1	23.2503	13.3	0.0316	13.4	0.0053	2.2	0.16	34.2	0.7	31.6	4.2	-167	331.4	34.2	0.7	NA		
08KH28-8	346	461015	1.6	9.9364	0.2	3.773	1.9	0.2719	1.9	0.99	1550.4	25.8	1587	15.1	1635.9	3.7	1635.9	3.7	94.8		
08KH28-9	1301	9603	22	22.2488	18.5	0.0133	18.9	0.0021	4.3	0.23	13.8	0.6	13.4	2.5	-58.5	453	13.8	0.6	NA		
08KH28-10	127	9837	0.9	23.8827	19.6	0.1111	20	0.0192	4.3	0.21	122.8	5.2	106.9	20.3	-234.2	498.1	122.8	5.2	NA		
08KH28-11	171	85384	0.9	14.875	1.8	1.3019	3.9	0.1405	3.5	0.88	847.2	27.7	846.6	22.7	844.8	38.3	847.2	27.7	100.3		
08KH28-12	397	12934	1.2	25.6535	36	0.047	36.1	0.0087	2.6	0.07	56.1	1.5	46.6	16.4	-418	967.5	56.1	1.5	NA		
08KH28-13	919	251620	10.1	15.4663	1.5	0.9589	2.7	0.1076	2.2	0.83	658.6	13.9	682.7	13.3	763.2	31.5	658.6	13.9	86.3		
08KH28-14	1331	189480	9.7	16.8304	0.3	0.7377	1.8	0.0901	1.8	0.99	555.8	9.5	561.1	7.8	582.4	6.1	555.8	9.5	95.4		
08KH28-15	2383	32896	1.5	20.9485	3.7	0.039	4	0.0059	1.6	0.39	38.1	0.6	38.8	1.5	86.2	86.6	38.1	0.6	NA		
08KH28-16	615	7423	1.2	17.7558	6.3	0.064	8	0.0082	4.9	0.61	52.9	2.6	63	4.9	465	139.4	52.9	2.6	NA		
08KH28-17	474	60756	1.9	17.301	2.8	0.5894	6.9	0.074	6.3	0.91	460	27.9	470.5	25.9	522.2	62	460	27.9	88.1		
08KH28-19	1932	6938	0.6	19.1327	9	0.028	9.3	0.0039	2.2	0.23	25	0.5	28	2.6	297.1	206.7	25	0.5	NA		
08KH28-20	1549	4354	12.7	16.9427	2.8	0.1857	9.5	0.0228	9	0.95	145.5	13	173	15.1	567.9	62	145.5	13	NA		
08KH28-21	183	87285	1.4	10.2054	1	2.9174	6.8	0.2159	6.7	0.99	1260.4	76.9	1386.4	51.5	1586.2	19.4	1586.2	19.4	79.5		
08KH28-22	610	121882	11.4	15.7216	0.6	0.8728	2.2	0.0995	2.1	0.96	611.6	12.3	637.1	10.4	728.6	13.6	611.6	12.3	83.9		
08KH28-23	70	17836	1.2	13.5717	3.7	1.766	24.4	0.1738	24.1	0.99	1033.2	229.9	1033.1	159.2	1032.8	75.3	1032.8	75.3	100		
08KH28-25	67	3806	1.2	24.6165	24.6	0.1579	25.5	0.0282	6.8	0.27	179.2	12.1	148.9	35.3	-311.2	637.5	179.2	12.1	NA		
08KH28-26	133	51661	1.5	14.0994	1.4	1.5639	2.2	0.1599	1.6	0.76	956.4	14.5	956	13.3	955.2	28.7	956.4	14.5	100.1		
08KH28-27	627	123834	4.5	17.3281	1	0.6302	2.4	0.0792	2.1	0.91	491.3	10.2	496.2	9.2	518.7	20.9	491.3	10.2	94.7		
08KH28-28	2772	44100	23	20.9943	7.4	0.0175	7.6	0.0027	1.7	0.23	17.2	0.3	17.7	1.3	81	175.4	17.2	0.3	NA		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
08KH28-29	936	125426	5.7	13.6283	0.8	0.679	10.1	0.0671	10	1	418.7	40.7	526.1	41.4	1024.4	17	418.7	40.7	40.9		
08KH28-30	272	12611	0.5	19.7368	7.7	0.138	8.1	0.0198	2.4	0.3	126.1	3	131.3	10	225.7	178.8	126.1	3	NA		
08KH28-31	473	11282	0.9	21.8387	15.4	0.0487	15.8	0.0077	3.6	0.23	49.6	1.8	48.3	7.5	-13.4	373.3	49.6	1.8	NA		
08KH28-32	729	25042	0.7	20.8679	3.8	0.0655	4.1	0.0099	1.6	0.38	63.6	1	64.4	2.5	95.4	89.3	63.6	1	NA		
08KH28-33	451	14896	2.2	24.795	13	0.0587	13.8	0.0106	4.6	0.33	67.7	3.1	57.9	7.8	-329.7	335.1	67.7	3.1	NA		
08KH28-34	343	17318	3	16.8055	11.3	0.25	13.5	0.0305	7.3	0.54	193.5	14	226.5	27.4	585.6	246.2	193.5	14	NA		
08KH28-36	820	67934	0.9	20.848	4.1	0.1111	4.5	0.0168	1.9	0.42	107.4	2	107	4.5	97.6	96.2	107.4	2	NA		
08KH28-37	361	18096	1.5	18.8013	9.4	0.111	12	0.0151	7.5	0.63	96.9	7.3	106.9	12.2	336.8	212.2	96.9	7.3	NA		
08KH28-38	860	244153	1.1	17.3821	1	0.6406	2.8	0.0808	2.7	0.94	500.7	12.8	502.7	11.2	511.9	20.9	500.7	12.8	97.8		
08KH28-39	411	192926	3.8	14.6386	0.5	1.2731	1.9	0.1352	1.8	0.97	817.3	13.8	833.8	10.6	878	9.4	817.3	13.8	93.1		
08KH28-40	83	5966	1.9	19.7981	14.1	0.1933	15.5	0.0278	6.4	0.41	176.5	11.1	179.4	25.4	218.5	327.6	176.5	11.1	NA		
08KH28-41	406	105968	1.2	12.5725	0.4	2.167	1.5	0.1976	1.4	0.97	1162.4	15	1170.5	10.1	1185.6	7	1185.6	7	98		
08KH28-42	1407	12736	5.4	17.3892	1	0.2841	3.2	0.0358	3	0.95	227	6.8	253.9	7.2	511	22.1	227	6.8	NA		
08KH28-43	313	214628	5	11.4335	0.6	2.7384	3.6	0.2271	3.6	0.99	1319.2	42.4	1338.9	26.7	1370.7	10.8	1370.7	10.8	96.2		
08KH28-44	530	7442	1	25.7205	37.4	0.0267	37.8	0.005	5.2	0.14	32.1	1.7	26.8	10	-424.9	1011	32.1	1.7	NA		
08KH28-46	280	7143	0.7	24.9118	21.4	0.0437	22.5	0.0079	6.8	0.3	50.7	3.5	43.4	9.6	-341.8	556.7	50.7	3.5	NA		
08KH28-47	260	30542	2.8	17.8905	3.9	0.2393	9.9	0.0311	9.1	0.92	197.1	17.7	217.9	19.4	448.2	85.7	197.1	17.7	NA		
08KH28-48	350	33270	2.2	17.3065	2.2	0.3819	6	0.0479	5.5	0.93	301.8	16.3	328.4	16.8	521.5	49	301.8	16.3	NA		
08KH28-49	811	13412	1.1	22.7189	6.7	0.0655	7	0.0108	2	0.29	69.2	1.4	64.4	4.4	-109.8	164.4	69.2	1.4	NA		
08KH28-50	267	9933	1.4	23.9835	16.8	0.0746	17.1	0.013	3	0.18	83.1	2.5	73	12.1	-244.9	428.3	83.1	2.5	NA		
08KH28-101	675	68569	3.1	19.7069	3.4	0.2341	4.2	0.0335	2.4	0.57	212.2	5	213.6	8	229.2	78.9	212.2	5	NA		
08KH28-102	746	33539	4.7	19.7135	3.2	0.1831	5.2	0.0262	4.1	0.79	166.6	6.7	170.8	8.1	228.5	73.9	166.6	6.7	NA		
08KH28-104	1296	1311685	4.2	10.4126	1	3.0376	3.3	0.2294	3.1	0.95	1331.3	37.9	1417.1	25.2	1548.5	18.5	1548.5	18.5	86		
08KH28-105	1291	363327	21.7	15.2026	1.1	0.8822	3.2	0.0973	3	0.94	598.4	16.9	642.2	15	799.3	23.4	598.4	16.9	74.9		
08KH28-109	2022	796347	142.8	13.5867	10.5	0.9474	13.5	0.0934	8.4	0.63	575.4	46.5	676.8	66.8	1030.5	213.6	575.4	46.5	55.8		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH28-110	346	112433	1.8	15.0378	1.3	1.2214	2.6	0.1332	2.3	0.87	806.2	17.3	810.4	14.6	822.1	26.7	806.2	17.3	98.1
08KH28-111	648	151087	2.7	15.0654	0.4	1.073	3.1	0.1172	3	0.99	714.6	20.5	740.2	16.1	818.3	8.4	714.6	20.5	87.3
08KH28-112	722	75823	9.3	17.3604	1.3	0.266	8.2	0.0335	8.1	0.99	212.4	17	239.5	17.6	514.7	28.3	212.4	17	NA
08KH28-113	606	32887	1.4	17.4878	4.7	0.2275	11.7	0.0289	10.7	0.91	183.4	19.3	208.1	22	498.6	103.8	183.4	19.3	NA
08KH28-114	522	5897	2.7	21.8353	11.9	0.0467	12.7	0.0074	4.4	0.35	47.5	2.1	46.4	5.7	-13	287.7	47.5	2.1	NA
08KH28-115	794	83468	20.8	13.4539	4.4	0.5371	10	0.0524	8.9	0.9	329.3	28.7	436.5	35.5	1050.4	89.6	329.3	28.7	NA
08KH28-116	38	38832	0.7	11.5651	4.5	2.7186	5.5	0.228	3.1	0.57	1324.2	37.5	1333.6	40.6	1348.6	86.5	1348.6	86.5	98.2
08KH28-118	772	191033	1.2	16.8034	9	0.6082	10.9	0.0741	6.3	0.57	460.9	27.9	482.4	42	585.9	194.9	460.9	27.9	78.7
08KH28-119	564	149231	2.8	15.0929	1.1	1.0545	2.5	0.1154	2.2	0.9	704.2	14.9	731.1	12.9	814.5	23.1	704.2	14.9	86.5
08KH28-121	869	77417	3.6	17.6226	0.5	0.5943	4.7	0.076	4.7	0.99	472	21.2	473.6	17.7	481.6	10.8	472	21.2	98
08KH28-122	495	152264	4.8	12.7291	2.2	1.7561	2.7	0.1621	1.6	0.58	968.6	14.1	1029.4	17.5	1161.1	43.5	1161.1	43.5	83.4
08KH28-123	513	172264	5.9	12.5551	0.4	1.8107	2.4	0.1649	2.4	0.98	983.8	21.8	1049.3	15.9	1188.3	8.7	1188.3	8.7	82.8
08KH28-124	140	89614	1.9	10.9664	1.1	3.3017	7.3	0.2626	7.2	0.99	1503.2	96.3	1481.5	56.7	1450.5	21	1450.5	21	103.6
08KH28-125	362	33023	1	12.5356	1.6	2.066	2.1	0.1878	1.4	0.67	1109.6	14.7	1137.6	14.7	1191.4	31.3	1191.4	31.3	93.1
08KH28-126	345	53905	3.5	16.0894	2.7	0.6284	7.4	0.0733	6.9	0.93	456.2	30.6	495.1	29.2	679.3	57.4	456.2	30.6	67.1
08KH28-127	433	141934	5.1	17.7325	2.3	0.6159	3.2	0.0792	2.2	0.7	491.4	10.6	487.2	12.4	467.9	50.8	491.4	10.6	105
08KH28-128	1171	145535	27.1	15.834	2.2	0.6596	13.9	0.0757	13.8	0.99	470.7	62.5	514.4	56.3	713.5	46.4	470.7	62.5	66
08KH28-129	781	277591	77.4	15.2505	0.5	0.9846	8.3	0.1089	8.3	1	666.4	52.6	696	42	792.7	9.7	666.4	52.6	84.1
08KH28-131	785	487477	2.4	15.0495	0.8	1.2639	7.1	0.138	7	0.99	833.1	55	829.7	40.1	820.5	16	833.1	55	101.5
08KH28-132	269	44808	1.5	17.4941	2.9	0.61	7.1	0.0774	6.5	0.91	480.6	30	483.6	27.2	497.8	63.3	480.6	30	96.5
08KH28-133	97	121387	1.6	4.954	0.8	15.7769	5.1	0.5669	5	0.99	2894.9	117.7	2863.4	48.9	2841.3	13.4	2841.3	13.4	101.9
08KH28-134	242	14473	1.6	19.557	9	0.2146	10.7	0.0304	5.7	0.53	193.3	10.8	197.4	19.2	246.8	208.5	193.3	10.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH28-135	944	20916	3.2	19.5169	3.6	0.234	4.5	0.0331	2.7	0.6	210.1	5.5	213.5	8.6	251.6	82.2	210.1	5.5	NA	
08KH28-136	321	117037	1.2	11.9503	0.7	2.4805	1.9	0.215	1.8	0.94	1255.3	20	1266.4	13.6	1285.1	12.9	1285.1	12.9	97.7	
08KH28-137	96	60452	0.4	12.4661	1.5	2.0797	3.3	0.188	2.9	0.89	1110.7	30	1142.1	22.6	1202.3	29.4	1202.3	29.4	92.4	
08KH28-138	1308	4706	0.8	20.0873	15.2	0.0525	16.1	0.0076	5.3	0.33	49.1	2.6	51.9	8.2	184.8	356.6	49.1	2.6	NA	
08KH28-139	769	539299	8.3	15.2439	1.1	1.0781	4	0.1192	3.8	0.96	725.9	26.4	742.7	21.1	793.6	23.1	725.9	26.4	91.5	
08KH28-140	327	93328	1.8	13.2477	0.7	1.8459	2.3	0.1774	2.2	0.96	1052.5	21.6	1062	15.3	1081.4	13.5	1081.4	13.5	97.3	
08KH28-141	779	26375	3.3	20.2621	7.3	0.0891	7.5	0.0131	1.8	0.24	83.8	1.5	86.6	6.2	164.6	170.2	83.8	1.5	NA	
08KH28-142	333	3699	1.7	22.6842	31.7	0.0306	33.9	0.005	11.8	0.35	32.4	3.8	30.6	10.2	-106	798	32.4	3.8	NA	
08KH28-143	467	87609	1.4	17.3442	1.6	0.6364	3.4	0.0801	3	0.88	496.4	14.4	500.1	13.5	516.7	35.9	496.4	14.4	96.1	
08KH28-144	1323	16943	1.1	20.6399	5.2	0.0542	6.4	0.0081	3.7	0.57	52.1	1.9	53.6	3.3	121.3	123.1	52.1	1.9	NA	
08KH28-145	321	7691	1.2	24.9313	17.2	0.0959	17.4	0.0173	2.9	0.17	110.8	3.2	93	15.5	-343.8	445.9	110.8	3.2	NA	
08KH28-147	67	5081	1.6	25.6083	30.6	0.1573	30.9	0.0292	4.5	0.14	185.6	8.2	148.3	42.7	-413.4	815.9	185.6	8.2	NA	
08KH28-148	522	24277	13.1	10.8414	0.9	1.0466	4.5	0.0823	4.4	0.98	509.8	21.5	727.2	23.2	1472.3	16.2	509.8	21.5	34.6	
08KH28-149	168	104217	1.2	10.5561	0.9	3.2196	5.3	0.2465	5.3	0.99	1420.4	67	1461.9	41.3	1522.7	16.2	1522.7	16.2	93.3	
08KH28-150	820	26869	37.4	6.0522	8.3	0.3992	10.8	0.0175	6.9	0.64	112	7.7	341.1	31.2	2509.9	139.1	112	7.7	NA	
08KH28-152	211	29768	2.3	17.7644	2.8	0.554	4.1	0.0714	3	0.73	444.4	12.7	447.6	14.8	463.9	62.1	444.4	12.7	95.8	
08KH28-154	381	8061	1.8	28.8266	27.7	0.0385	28.2	0.0081	5	0.18	51.7	2.6	38.4	10.6	-733.4	787.7	51.7	2.6	NA	
08KH28-155	249	73199	2.6	17.5507	2.4	0.6476	4.7	0.0824	4	0.86	510.6	19.7	507	18.8	490.7	53.7	510.6	19.7	104.1	
08KH28-157	263	43272	1.5	17.1906	2.7	0.6544	10.6	0.0816	10.2	0.97	505.6	49.6	511.2	42.5	536.2	60	505.6	49.6	94.3	
08KH28-159	884	2438	21.2	20.6622	7.6	0.0631	8.1	0.0095	2.9	0.35	60.7	1.7	62.1	4.9	118.7	179.5	60.7	1.7	NA	
08KH28-160	287	80847	1.8	17.6705	2.6	0.6069	4.5	0.0778	3.7	0.82	482.8	17.3	481.6	17.4	475.6	56.8	482.8	17.3	101.5	
08KH28-161	187	138199	2.2	9.9786	0.8	3.8436	3.3	0.2782	3.2	0.97	1582.1	45.2	1601.9	26.7	1628.1	13.9	1628.1	13.9	97.2	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
08KH28-162	1049	221836	50.2	14.8826	1.7	0.8602	5.2	0.0928	4.9	0.95	572.4	26.9	630.2	24.4	843.7	35.3	572.4	26.9	67.8		
08KH28-163	240	55839	1.4	13.8663	0.9	1.6675	3.2	0.1677	3.1	0.96	999.4	28.5	996.2	20.3	989.2	17.8	999.4	28.5	101		
08KH28-164	291	140201	3.3	8.8065	0.5	5.2138	7	0.333	7	1	1852.9	112.7	1854.9	59.9	1857	9.7	1857	9.7	99.8		
08KH28-165	68	1088	2	25.6928	58.1	0.0455	60.6	0.0085	17	0.28	54.4	9.2	45.2	26.8	-422	1650.1	54.4	9.2	NA		
08KH28-166	519	44590	10.7	17.7393	2.6	0.2336	6.1	0.0301	5.5	0.9	190.9	10.3	213.2	11.7	467.1	57.9	190.9	10.3	NA		
08KH28-167	617	246379	1.4	15.1512	0.7	1.227	6.4	0.1348	6.4	0.99	815.4	49	813	36	806.4	14.1	815.4	49	101.1		
08KH28-168	303	242105	2.6	12.6301	0.8	2.112	1.2	0.1935	1	0.78	1140.1	10.1	1152.7	8.5	1176.6	15.3	1176.6	15.3	96.9		
08KH28-170	303	162912	2.3	9.8511	0.5	4.0339	2	0.2882	2	0.97	1632.6	28.2	1641.1	16.3	1651.9	8.4	1651.9	8.4	98.8		
08KH28-171	1990	820950	5	10.1477	0.1	3.1628	1.8	0.2328	1.8	1	1349.1	22	1448.1	14	1596.7	1.9	1596.7	1.9	84.5		
08KH28-173	2086	20199	124.2	22.0359	8.9	0.024	9.8	0.0038	4.1	0.42	24.6	1	24.1	2.3	-35.2	215.5	24.6	1	NA		
08KH28-174	1111	21336	4.9	19.158	5.6	0.2126	6.1	0.0295	2.4	0.39	187.6	4.4	195.7	10.8	294	127.2	187.6	4.4	NA		
08KH28-174	395	168200	12.6	11.4559	2	2.3183	3.9	0.1926	3.4	0.86	1135.5	35.3	1217.9	27.9	1366.9	38.3	1366.9	38.3	83.1		
08KH28-176	858	113891	89.4	17.0183	0.8	0.7213	2.8	0.089	2.7	0.96	549.8	14.2	551.4	12	558.2	17.6	549.8	14.2	98.5		
08KH28-177	641	117515	3	17.3407	1	0.6277	3.6	0.0789	3.5	0.96	489.8	16.3	494.6	14.1	517.1	22.1	489.8	16.3	94.7		
08KH28-178	189	158551	1.2	10.0421	0.6	3.9758	0.9	0.2896	0.7	0.76	1639.4	10.1	1629.3	7.5	1616.2	11.1	1616.2	11.1	101.4		
08KH28-179	726	37354	21.3	17.5406	4.7	0.091	9.1	0.0116	7.8	0.85	74.2	5.8	88.4	7.7	492	104.8	74.2	5.8	NA		
08KH28-180	1095	3302	1.5	14.9331	27.1	0.069	27.4	0.0075	4	0.15	48	1.9	67.7	17.9	836.7	574	48	1.9	NA		
08KH28-181	592	893	2.3	18.8836	16.4	0.0723	17.3	0.0099	5.4	0.31	63.6	3.4	70.9	11.8	326.9	374.3	63.6	3.4	NA		
08KH28-182	387	71080	2.6	17.523	2	0.5744	3.2	0.073	2.5	0.79	454.2	11.1	460.8	11.9	494.1	43.3	454.2	11.1	91.9		
08KH28-182	808	30613	71.4	23.8516	26.2	0.0242	26.5	0.0042	4.2	0.16	26.9	1.1	24.3	6.4	-231	669.4	26.9	1.1	NA		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 @ 11)

Grain	U (ppm)	206Pb 204Pb		U/Th	Isotope ratios						Apparent ages (Ma)									
					206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±	Best (Ma)	age ± (Ma)	Conc (Ma)
					207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH34-1	522	797611	0.9	9.9136	0.2	4.0153	2.2	0.2887	2.2	1		1635	31.7	1637.3	17.9	1640.2	3.2	1640.2	3.2	99.7
08KH34-2	2172	37242	33.8	21.0747	3	0.0643	3.6	0.0098	2	0.56		63	1.3	63.2	2.2	71.9	70.2	63	1.3	NA
08KH34-3	832	17437	1.3	9.6243	0.3	3.1049	10.1	0.2167	10.1	1		1264.5	115.8	1433.9	77.7	1695	6	1695	6	74.6
08KH34-4	207	258470	1.6	10.1394	0.8	3.5939	3	0.2643	2.9	0.96		1511.7	38.8	1548.2	23.8	1598.3	15.3	1598.3	15.3	94.6
08KH34-5	1316	84121	1	20.9964	3.3	0.0763	4.5	0.0116	3	0.67		74.5	2.2	74.7	3.2	80.8	79.5	74.5	2.2	NA
08KH34-6	326	4531	1.3	12.314	2	1.5044	3.4	0.1344	2.8	0.82		812.7	21.2	932.2	20.7	1226.5	38.5	1226.5	38.5	66.3
08KH34-7	549	8573	4.4	19.969	9.9	0.0462	14.6	0.0067	10.7	0.73		43	4.6	45.8	6.6	198.6	231.1	43	4.6	NA
08KH34-8	479	16495	0.8	12.4842	2.4	1.7939	5	0.1624	4.4	0.88		970.2	40	1043.2	32.8	1199.5	46.7	1199.5	46.7	80.9
08KH34-10	233	16770	1	13.6315	1.3	1.7872	4.1	0.1767	3.8	0.94		1048.9	37.1	1040.8	26.4	1023.9	27	1023.9	27	102.4
08KH34-11	715	20561	0.9	20.5332	8.1	0.0785	8.3	0.0117	1.9	0.22		75	1.4	76.8	6.1	133.5	190.2	75	1.4	NA
08KH34-12	467	545112	3	8.7877	0.3	4.6223	8	0.2946	8	1		1664.5	117.6	1753.3	67.1	1860.9	5.2	1860.9	5.2	89.4
08KH34-13	992	24909	2.5	22.2525	6.5	0.0392	6.9	0.0063	2.3	0.33		40.7	0.9	39	2.6	-58.9	158.4	40.7	0.9	NA
08KH34-14	4125	790222	2.6	17.482	0.1	0.5536	11.7	0.0702	11.7	1		437.3	49.4	447.3	42.3	499.3	1.9	499.3	1.9	87.6
08KH34-15	1606	70298	1.4	20.7537	2	0.0796	3.3	0.012	2.6	0.79		76.8	2	77.8	2.4	108.3	46.8	76.8	2	NA
08KH34-16	2160	20482	17.7	19.9711	4	0.0639	4.4	0.0093	2	0.45		59.4	1.2	62.9	2.7	198.3	92.1	59.4	1.2	NA
08KH34-17	307	19444	1.5	12.4569	0.8	1.6662	4.1	0.1505	4.1	0.98		903.9	34.2	995.7	26.2	1203.8	16.2	1203.8	16.2	75.1
08KH34-18	358	420489	2.7	14.3009	0.9	1.4577	1.6	0.1512	1.3	0.83		907.7	11	913.1	9.4	926.1	17.9	926.1	17.9	98
08KH34-19	553	2482	0.3	18.7108	15.1	0.093	15.6	0.0126	3.7	0.24		80.8	2.9	90.3	13.4	347.7	343.8	80.8	2.9	NA
08KH34-20	245	148616	1.1	11.1097	0.7	2.8651	3.5	0.2309	3.4	0.98		1339	41.1	1372.8	26.2	1425.8	13.9	1425.8	13.9	93.9
08KH34-21	297	22837	1.5	19.4327	3.2	0.2669	6.8	0.0376	6	0.88		238.1	14	240.2	14.6	261.4	73.5	238.1	14	NA
08KH34-22	188	146591	1.2	9.8578	0.4	3.9627	1.4	0.2833	1.3	0.95		1608	18.6	1626.6	11.1	1650.7	7.9	1650.7	7.9	97.4
08KH34-23	163	85999	0.4	12.7322	1.3	2.0597	2.7	0.1902	2.4	0.88		1122.5	24.4	1135.5	18.5	1160.6	25.6	1160.6	25.6	96.7
08KH34-24	86	49346	1.1	13.7321	2.6	1.6849	3.3	0.1678	2.1	0.62		1000	19.2	1002.8	21.2	1009	52.9	1009	52.9	99.1
08KH34-25	1100	28981	0.6	21.8837	6.5	0.046	9.4	0.0073	6.7	0.72		46.9	3.1	45.7	4.2	-18.4	158.2	46.9	3.1	NA
08KH34-26	5114	19855	0.5	20.8012	0.8	0.1775	20.2	0.0268	20.1	1		170.3	33.8	165.9	30.8	102.9	18.2	170.3	33.8	NA
08KH34-27	295	25687	1.3	12.7516	1	1.4591	4.7	0.1349	4.6	0.98		816	35.4	913.6	28.5	1157.6	20.6	1157.6	20.6	70.5

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Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH34-28	809	1274	0.9	19.3719	8.1	0.0808	8.1	0.0113	1.2	0.15	72.7	0.9	78.9	6.2	268.6	185	72.7	0.9	NA	
08KH34-29	169	193862	2.1	10.8125	1.4	2.9527	2.9	0.2315	2.6	0.88	1342.6	31.4	1395.5	22.2	1477.4	26	1477.4	26	90.9	
08KH34-30	2739	427893	6.1	17.5796	0.3	0.3866	4.6	0.0493	4.6	1	310.1	13.9	331.9	13	487.1	6.3	310.1	13.9	NA	
08KH34-33	243	325224	0.9	9.8733	0.5	3.8278	1.5	0.2741	1.4	0.94	1561.6	20	1598.6	12.4	1647.8	9.7	1647.8	9.7	94.8	
08KH34-34	1219	85628	0.5	21.2404	5.8	0.0764	6.8	0.0118	3.5	0.52	75.4	2.7	74.7	4.9	53.3	137.6	75.4	2.7	NA	
08KH34-35	945	27391	3.9	16.6608	0.9	0.6753	3.4	0.0816	3.3	0.97	505.7	15.8	523.9	13.8	604.3	18.7	604.3	18.7	83.7	
08KH34-36	798	146796	19.9	10.725	0.6	0.5114	19.6	0.0398	19.6	1	251.5	48.2	419.4	67.3	1492.7	11.1	251.5	48.2	NA	
08KH34-38	123	28105	1.7	12.8362	1.5	1.7982	6.2	0.1674	6	0.97	997.8	55.5	1044.8	40.4	1144.4	29	1144.4	29	87.2	
08KH34-39	400	18752	0.7	7.3542	0.4	6.1026	9.6	0.3255	9.6	1	1816.5	151.4	1990.6	83.7	2176.6	7.8	2176.6	7.8	83.5	
08KH34-40	107	52886	0.8	12.5987	1.4	1.9636	2.3	0.1794	1.8	0.8	1063.8	17.9	1103.1	15.3	1181.5	26.7	1181.5	26.7	90	
08KH34-42	168	166336	1.2	12.795	1.3	2.0442	2.1	0.1897	1.7	0.8	1119.7	17.5	1130.4	14.5	1150.8	25	1150.8	25	97.3	
08KH34-45	126	142632	1.5	4.8839	0.3	15.7647	2.4	0.5584	2.4	0.99	2860	54.7	2862.6	22.7	2864.5	4.3	2864.5	4.3	99.8	
08KH34-46	468	31654	1.6	20.0104	8.7	0.1299	10.1	0.0188	5.2	0.51	120.4	6.2	124	11.8	193.8	202.3	120.4	6.2	NA	
08KH34-47	105	3061	0.9	12.6584	95.9	0.0699	96.8	0.0064	12.9	0.13	41.2	5.3	68.6	64.3	1172.1	#VALUE!	41.2	5.3	NA	
08KH34-48	414	13304	1.7	21.7007	18.7	0.0559	20.7	0.0088	8.8	0.43	56.5	5	55.2	11.1	1.9	455.1	56.5	5	NA	
08KH34-50	1008	147814	1.1	17.5615	0.9	0.6107	3.8	0.0778	3.7	0.97	482.8	17	484	14.5	489.3	20.1	489.3	20.1	98.7	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)				Isotope ratios						Apparent ages (Ma)									
		206Pb	U/Th		206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±	Best (Ma)	age ± (Ma)	Conc (Ma)
		204Pb			207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH24-1	765	281514	2.3		17.4342	0.9	0.5939	1.9	0.0751	1.6	0.87	466.8	7.4	473.3	7.1	505.3	20.6	466.8	7.4	92.4
08KH24-2	178	29263	1.9		17.638	5.6	0.4384	18.8	0.0561	17.9	0.95	351.8	61.4	369.1	58.2	479.7	124	351.8	61.4	NA
08KH24-3	181	33299	1		17.1169	3.2	0.6458	4.7	0.0802	3.4	0.72	497.1	16.1	505.9	18.6	545.6	70.9	497.1	16.1	91.1
08KH24-5	344	140209	1.5		17.0465	2	0.6458	5.6	0.0798	5.2	0.93	495.2	24.8	505.9	22.2	554.6	43.7	495.2	24.8	89.3
08KH24-7	326	86203	1.2		17.2506	2.4	0.6584	2.9	0.0824	1.7	0.57	510.3	8.1	513.6	11.7	528.6	52	510.3	8.1	96.5
08KH24-8	669	298670	1.3		14.9767	0.6	1.2763	2.3	0.1386	2.3	0.97	837	17.7	835.2	13.3	830.6	12	837	17.7	100.8
08KH24-9	351	201394	7.2		15.0913	1.2	1.079	3.8	0.1181	3.6	0.95	719.6	24.6	743.1	20	814.7	25	719.6	24.6	88.3
08KH24-10	134	26185	0.9		17.7631	8	0.6052	8.3	0.078	2	0.24	484	9.2	480.5	31.7	464.1	178.4	484	9.2	104.3
08KH24-11	67	28202	1.5		14.0424	2.7	1.5262	5.1	0.1554	4.3	0.84	931.4	37.3	941	31.3	963.5	56	931.4	37.3	96.7
08KH24-12	186	336851	1.8		11.3428	0.8	2.888	2.8	0.2376	2.7	0.96	1374.1	33.6	1378.8	21.3	1386	14.7	1386	14.7	99.1
08KH24-14	145	114826	3.7		9.8284	0.7	3.8907	2.6	0.2773	2.5	0.97	1577.9	34.6	1611.8	20.7	1656.2	12.3	1656.2	12.3	95.3
08KH24-15	256	1651	53.3		1.9181	798	0.1075	798.4	0.0015	24.4	0.03	9.6	2.3	103.7	1048	NA	NA	9.6	2.3	NA
08KH24-17	1650	47870	1		17.3024	1.1	0.6176	2.1	0.0775	1.8	0.87	481.2	8.5	488.4	8.2	522	23.3	481.2	8.5	92.2
08KH24-18	220	24535	1		16.3448	7	0.6679	7.4	0.0792	2.2	0.3	491.2	10.3	519.5	30	645.6	151.5	491.2	10.3	76.1
08KH24-19	47	30823	1.7		14.0305	5.6	1.6606	5.7	0.169	1.2	0.21	1006.5	11.1	993.6	36.3	965.3	114.6	1006.5	11.1	104.3
08KH24-20	3508	657586	4.1		17.2244	0.2	0.604	2.2	0.0755	2.2	0.99	468.9	9.9	479.8	8.4	531.9	5.4	468.9	9.9	88.2
08KH24-21	327	27374	1.8		17.4883	1.6	0.6004	2.6	0.0762	2	0.79	473.2	9.3	477.5	9.8	498.5	34.9	473.2	9.3	94.9
08KH24-22	247	93343	1.5		13.7993	0.8	1.7252	1.6	0.1727	1.4	0.89	1026.7	13.7	1017.9	10.5	999.1	15.3	999.1	15.3	102.8
08KH24-23	2275	522928	2.2		17.2165	0.4	0.6332	1.6	0.0791	1.6	0.98	490.6	7.6	498.1	6.5	532.9	7.8	490.6	7.6	92
08KH24-24	294	86397	1.9		17.2727	1.6	0.6547	3.7	0.082	3.4	0.91	508.2	16.5	511.4	15	525.8	34.5	508.2	16.5	96.7
08KH24-25	188	63147	1.5		17.7293	3.5	0.5873	3.8	0.0755	1.5	0.39	469.3	6.7	469.2	14.3	468.3	77.4	469.3	6.7	100.2
08KH24-26	1045	25201	27.6		20.8634	6.6	0.0262	21.5	0.004	20.5	0.95	25.5	5.2	26.3	5.6	95.8	156.9	25.5	5.2	NA
08KH24-27	703	8223	28.2		26.8759	42.9	0.02	43	0.0039	2.6	0.06	25.1	0.6	20.1	8.6	-541.4	1199.3	25.1	0.6	NA
08KH24-28	687	259520	1.6		14.9045	0.3	1.2429	1.9	0.1344	1.9	0.98	812.7	14.3	820.2	10.7	840.7	6.9	812.7	14.3	96.7
08KH24-29	323	155376	2.4		17.3073	1.7	0.6293	3.9	0.079	3.5	0.9	490.1	16.5	495.7	15.3	521.4	37.1	490.1	16.5	94
08KH24-30	376	84854	2.4		17.2617	2.1	0.6082	3.6	0.0761	3	0.82	473	13.5	482.4	14	527.2	46	473	13.5	89.7

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
08KH24-31	270	35149	1.7	17.6737	1.7	0.6015	2.2	0.0771	1.5	0.66	478.8	6.8	478.2	8.5	475.3	37.3	478.8	6.8	100.7	
08KH24-32	540	116576	1.7	17.5348	1.5	0.4932	3	0.0627	2.5	0.85	392.1	9.6	407.1	9.9	492.6	34.1	392.1	9.6	NA	
08KH24-34	60	810	1.4	6.7071	178	0.137	179.4	0.0067	23.1	0.13	42.8	9.8	130.3	223	2335.6	178	42.8	9.8	NA	
08KH24-35	1911	302900	2.5	17.3333	0.4	0.6408	1.6	0.0806	1.6	0.97	499.4	7.6	502.8	6.5	518.1	9.4	499.4	7.6	96.4	
08KH24-36	1487	422976	6.9	17.415	0.7	0.6245	1.9	0.0789	1.8	0.93	489.4	8.3	492.6	7.4	507.8	15.9	489.4	8.3	96.4	
08KH24-38	5309	383184	4.7	17.3941	0.3	0.6461	5.8	0.0815	5.8	1	505.1	28.1	506.1	23.1	510.4	7.4	505.1	28.1	99	
08KH24-39	330	81060	2.6	17.4436	1.8	0.6017	4.2	0.0761	3.8	0.9	473	17.4	478.3	16.1	504.1	39.5	473	17.4	93.8	
08KH24-40	2241	39110	257.7	20.2116	6.5	0.0245	16.5	0.0036	15.2	0.92	23.2	3.5	24.6	4	170.5	151.4	23.2	3.5	NA	
08KH24-41	380	209322	1.4	13.755	0.5	1.6738	3.8	0.167	3.8	0.99	995.5	34.9	998.6	24.3	1005.6	10	1005.6	10	99	
08KH24-43	177	9092	1.2	23.1166	19.4	0.0782	19.8	0.0131	3.8	0.19	83.9	3.2	76.4	14.6	-152.7	486.3	83.9	3.2	NA	
08KH24-44	80	57137	2.3	13.9073	2.8	1.6183	3.1	0.1632	1.5	0.46	974.7	13.2	977.3	19.7	983.3	56.6	974.7	13.2	99.1	
08KH24-45	427	266564	2.5	10.9793	0.4	2.9455	3.3	0.2346	3.3	0.99	1358.3	40.4	1393.7	25.2	1448.3	7.1	1448.3	7.1	93.8	
08KH24-46	276	14631	0.7	16.9645	2	0.6066	2.8	0.0746	2	0.71	464	9.1	481.4	10.9	565.1	43.2	464	9.1	82.1	
08KH24-47	176	23699	1.3	17.3365	4	0.5701	5.8	0.0717	4.2	0.72	446.3	18.1	458.1	21.4	517.7	87.8	446.3	18.1	86.2	
08KH24-48	439	160653	1.5	17.3112	1	0.5522	2.9	0.0693	2.7	0.94	432.1	11.4	446.4	10.4	520.9	21.4	432.1	11.4	83	
08KH24-49	250	68191	4.3	14.9965	2	1.1832	9.9	0.1287	9.7	0.98	780.4	71.1	792.8	54.4	827.9	41.1	780.4	71.1	94.3	
08KH24-50	532	231338	1.8	10.7719	0.7	3.2001	3.4	0.25	3.3	0.98	1438.5	43.1	1457.2	26.5	1484.5	13.8	1484.5	13.8	96.9	
08KH24-51	674	15153	99.3	24.8361	27.7	0.0237	28.4	0.0043	6	0.21	27.5	1.6	23.8	6.7	-334	725.3	27.5	1.6	NA	
08KH24-52	2448	297988	11.8	17.4211	0.4	0.5782	4.8	0.0731	4.7	1	454.5	20.8	463.3	17.7	507	9.6	454.5	20.8	89.7	
08KH24-53	175	54792	1.2	9.9333	1.4	3.2857	3.4	0.2367	3.1	0.92	1369.6	38.8	1477.7	26.6	1636.5	25.1	1636.5	25.1	83.7	
08KH24-54	105	109450	1.3	9.8207	0.9	3.9323	1.8	0.2801	1.5	0.87	1591.8	21.7	1620.4	14.4	1657.6	16.5	1657.6	16.5	96	
08KH24-55	150	86759	1.6	13.7596	1.6	1.5905	2.1	0.1587	1.3	0.63	949.7	11.6	966.5	13	1004.9	32.8	949.7	11.6	94.5	
08KH24-56	56	34732	1	12.6078	3.8	2.0976	4	0.1918	1.4	0.36	1131.1	15	1148	27.7	1180	74.2	1180	74.2	95.9	
08KH24-57	275	78306	4.7	14.0466	1.8	0.6838	5	0.0697	4.6	0.93	434.1	19.5	529.1	20.6	962.9	37.7	434.1	19.5	45.1	
08KH24-58	864	3160	109.5	14.0638	119	0.0137	120.1	0.0014	15.3	0.13	9	1.4	13.8	16.5	960.4	461.8	9	1.4	NA	
08KH24-59	974	193134	97.4	17.1933	0.7	0.6618	1.7	0.0825	1.6	0.92	511.2	7.6	515.7	6.8	535.9	14.8	511.2	7.6	95.4	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH24-60	99	34691	0.9	17.065	6.1	0.6143	6.4	0.076	1.6	0.26	472.4	7.4	486.2	24.6	552.3	134.3	472.4	7.4	85.5
08KH24-61	288	229661	1.7	11.047	0.5	2.7184	2.3	0.2178	2.3	0.98	1270.2	26.1	1333.5	17.3	1436.6	9.7	1436.6	9.7	88.4
08KH24-63	255	41840	2	17.5132	2.1	0.6022	2.5	0.0765	1.4	0.55	475.2	6.3	478.6	9.6	495.4	46.2	475.2	6.3	95.9
08KH24-64	2139	1128313	1.5	14.9917	0.9	1.1609	3.2	0.1262	3.1	0.96	766.3	22.3	782.4	17.5	828.5	18.5	766.3	22.3	92.5
08KH24-65	1214	451065	10	13.0392	0.3	1.8794	1	0.1777	0.9	0.94	1054.6	8.9	1073.9	6.4	1113.2	6.4	1113.2	6.4	94.7
08KH24-66	369	107928	1.8	13.7772	0.5	1.5916	1.6	0.159	1.6	0.96	951.4	13.9	966.9	10.2	1002.3	9.5	951.4	13.9	94.9
08KH24-67	301	69208	6	16.3387	3.3	0.5051	7.6	0.0599	6.8	0.9	374.8	24.9	415.2	25.9	646.4	71.9	374.8	24.9	NA
08KH24-68	232	39686	1.5	13.1679	1.1	1.8229	1.5	0.1741	1	0.67	1034.6	9.5	1053.7	9.7	1093.6	21.9	1093.6	21.9	94.6
08KH24-69	1055	30188	1.3	17.3649	2.5	0.5982	5.2	0.0753	4.5	0.88	468.3	20.5	476.1	19.6	514.1	54	468.3	20.5	91.1
08KH24-71	128	23959	1.5	17.5739	5.4	0.6	6	0.0765	2.4	0.4	475	11	477.2	22.7	487.7	120.3	475	11	97.4
08KH24-72	597	94135	29.8	16.8588	2.5	0.5594	6.4	0.0684	5.8	0.92	426.5	24.1	451.1	23.1	578.7	54.2	426.5	24.1	73.7
08KH24-73	243	86348	1.3	17.0113	3.8	0.5745	5.3	0.0709	3.7	0.7	441.4	15.9	460.9	19.6	559.1	82.1	441.4	15.9	78.9
08KH24-74	294	73551	1	17.5304	2.5	0.629	3.8	0.08	2.9	0.77	495.9	14	495.4	15	493.2	54.2	495.9	14	100.6
08KH24-75	124	60226	2.1	13.667	1.9	1.7101	2.3	0.1695	1.2	0.53	1009.4	11.2	1012.3	14.5	1018.6	38.7	1018.6	38.7	99.1
08KH24-76	448	2165	112.2	7.9087	167	0.0225	168.8	0.0013	24.2	0.14	8.3	2	22.5	37.7	2049.1	33.4	8.3	2	NA
08KH24-77	192	80905	1.6	15.0012	1.5	1.2051	1.8	0.1311	1.1	0.6	794.2	8.3	802.9	10.3	827.2	30.8	794.2	8.3	96
08KH24-79	717	96633	2.1	17.5121	1.2	0.6327	2.3	0.0804	2	0.85	498.3	9.4	497.8	9	495.5	26.5	498.3	9.4	100.6
08KH24-80	557	102668	2.7	17.2927	1.2	0.6158	3.1	0.0772	2.8	0.92	479.6	12.9	487.2	11.8	523.2	26.9	479.6	12.9	91.7
08KH24-81	910	231651	4	17.3231	0.9	0.6118	1.4	0.0769	1.2	0.8	477.4	5.3	484.7	5.6	519.4	19	477.4	5.3	91.9
08KH24-83	513	141059	2.9	14.9364	0.5	1.1896	2	0.1289	1.9	0.97	781.4	13.9	795.8	10.8	836.2	9.7	781.4	13.9	93.4
08KH24-84	256	89914	2.2	15.0281	0.8	1.2193	1.9	0.1329	1.7	0.91	804.4	12.9	809.5	10.5	823.5	16.6	804.4	12.9	97.7
08KH24-85	1020	25611	2.1	17.4116	1.3	0.529	6.3	0.0668	6.2	0.98	416.9	24.9	431.2	22.1	508.2	28	416.9	24.9	82
08KH24-86	401	134027	1.9	17.6141	2.4	0.4798	3	0.0613	1.8	0.59	383.5	6.6	397.9	9.9	482.7	53.7	383.5	6.6	NA
08KH24-87	128	48693	2.2	13.7564	1.1	1.524	4.6	0.1521	4.5	0.97	912.4	38	940.1	28.3	1005.4	23.3	912.4	38	90.8
08KH24-88	1512	402977	8.7	17.3268	0.2	0.6312	2.1	0.0793	2.1	0.99	492.1	10.1	496.8	8.4	518.9	5.4	492.1	10.1	94.8
08KH24-89	599	12206	6.1	22.6706	19.1	0.038	19.3	0.0063	2.8	0.15	40.2	1.1	37.9	7.2	-104.5	473.9	40.2	1.1	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
08KH24-90	933	768072	21.3	15.1214	0.4	1.1233	1.9	0.1232	1.9	0.98	748.9	13.3	764.6	10.4	810.5	8.8	748.9	13.3	92.4		
08KH24-91	242	61554	1.2	17.5738	3.5	0.5881	4.2	0.075	2.3	0.54	465.9	10.2	469.6	15.8	487.8	78.2	465.9	10.2	95.5		
08KH24-92	595	114579	3.8	17.4327	0.8	0.6052	2.6	0.0765	2.5	0.95	475.3	11.4	480.6	9.9	505.5	17.1	475.3	11.4	94		
08KH24-93	275	48125	1	17.6718	2.3	0.5873	3.8	0.0753	3.1	0.81	467.8	14	469.1	14.4	475.5	49.8	467.8	14	98.4		
08KH24-94	404	81590	2.3	17.4705	1.3	0.5625	4.7	0.0713	4.5	0.96	443.8	19.4	453.1	17.2	500.8	27.8	443.8	19.4	88.6		
08KH24-95	214	40670	1	17.6809	2.9	0.5939	3.1	0.0762	1	0.32	473.2	4.6	473.4	11.8	474.4	65.1	473.2	4.6	99.7		
08KH24-96	245	8797	32.2	17.4406	33.8	0.0343	37.2	0.0043	15.5	0.42	27.9	4.3	34.3	12.5	504.5	763.4	27.9	4.3	NA		
08KH24-97	493	288847	2.2	13.5962	0.6	1.6735	5.2	0.165	5.2	0.99	984.6	47.1	998.5	33.1	1029.1	13.1	1029.1	13.1	95.7		
08KH24-98	247	64372	2.1	15.1488	1.6	1.1996	2	0.1318	1.2	0.6	798.1	9	800.4	11	806.7	33.4	798.1	9	98.9		
08KH24-99	881	110234	1.4	17.6094	0.8	0.5947	1.1	0.076	0.8	0.72	471.9	3.5	473.9	4.1	483.3	16.7	471.9	3.5	97.6		
08KH24-100	665	199009	4.1	15.6684	0.8	0.6873	32.3	0.0781	32.2	1	484.8	150.6	531.2	134.2	735.8	16.2	484.8	150.6	65.9		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)				Isotope ratios						Apparent ages (Ma)									
		206Pb	U/Th		206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±	Best (Ma)	age ± (Ma)	Conc (Ma)
		204Pb			207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
PFS-1	138	39971	0.8		17.307	4.4	0.6163	5	0.0774	2.3	0.47	480.4	10.8	487.6	19.2	521.4	96	480.4	10.8	92.1
PFS-2	200	64045	1.5		13.7131	0.7	1.5093	3.7	0.1501	3.7	0.98	901.6	30.9	934.2	22.9	1011.8	14.5	901.6	30.9	89.1
PFS-3	999	224194	4.1		17.4037	0.8	0.5997	2.2	0.0757	2.1	0.93	470.4	9.5	477	8.5	509.2	18.1	470.4	9.5	92.4
PFS-4	240	16541	1.5		13.7648	3.3	1.3583	7.9	0.1356	7.2	0.91	819.7	55	871.1	46.1	1004.2	66.9	819.7	55	81.6
PFS-5	330	83099	1		17.6791	1.8	0.5894	2.7	0.0756	2	0.74	469.6	8.9	470.5	10	474.6	39.8	469.6	8.9	98.9
PFS-6	306	316897	2.5		12.9431	0.6	1.8235	1.8	0.1712	1.7	0.95	1018.6	16	1053.9	11.7	1128	11.2	1128	11.2	90.3
PFS-7	787	602876	2.3		17.4554	0.6	0.6415	1.4	0.0812	1.2	0.91	503.3	6	503.2	5.4	502.7	12.2	503.3	6	100.1
PFS-8	361	165028	2.1		9.694	0.6	3.9841	2.8	0.2801	2.7	0.98	1591.9	38.2	1631	22.5	1681.7	10.9	1681.7	10.9	94.7
PFS-9	496	47174	30		17.3538	2.3	0.1252	6.5	0.0158	6.1	0.94	100.8	6.1	119.7	7.3	515.5	50.2	100.8	6.1	NA
PFS-10	184	4557	1.5		25.2745	34.3	0.0477	34.6	0.0087	4.8	0.14	56.1	2.7	47.3	16	-379.2	913.5	56.1	2.7	NA
PFS-11	139	72402	1.4		13.6745	2.1	1.6999	3.6	0.1686	2.9	0.82	1004.3	27.4	1008.5	23.1	1017.5	42.3	1017.5	42.3	98.7
PFS-12	69	81178	0.9		11.9834	2.7	2.5144	3.2	0.2185	1.8	0.56	1274.1	21.1	1276.2	23.6	1279.7	52.4	1279.7	52.4	99.6
PFS-13	1109	5871	1		17.2167	1.5	0.5385	6.7	0.0672	6.5	0.97	419.5	26.3	437.4	23.7	532.9	33.1	419.5	26.3	78.7
PFS-14	295	22722	1.2		17.7194	3.2	0.359	4.7	0.0461	3.4	0.73	290.8	9.8	311.5	12.6	469.5	71.2	290.8	9.8	NA
PFS-15	114	32265	1.1		17.9895	9.3	0.5581	11.1	0.0728	5.9	0.54	453.1	26	450.3	40.2	435.9	208.1	453.1	26	103.9
PFS-16	194	20909	1.7		20.4884	10	0.2305	10.5	0.0342	2.9	0.28	217.1	6.3	210.6	19.9	138.6	236.3	217.1	6.3	NA
PFS-18	76	177643	0.9		9.8661	1.3	3.8714	2.6	0.277	2.3	0.87	1576.3	32.1	1607.7	21.4	1649.1	24.6	1649.1	24.6	95.6
PFS-19	387	30389	1.7		13.7358	1	1.6239	1.5	0.1618	1.1	0.73	966.6	9.9	979.5	9.5	1008.4	21	966.6	9.9	95.9
PFS-21	5033	17488	54.1		21.999	15.1	0.0067	15.6	0.0011	3.8	0.25	6.9	0.3	6.8	1.1	-31.1	368.7	6.9	0.3	NA
PFS-22	468	90578	1.9		17.3793	0.6	0.6376	1.1	0.0804	0.9	0.82	498.3	4.4	500.8	4.4	512.3	14	498.3	4.4	97.3
PFS-23	991	244413	1.8		10.4092	0.1	3.3539	2.5	0.2532	2.5	1	1455	31.9	1493.7	19.2	1549.1	1.9	1549.1	1.9	93.9
PFS-25	454	34049	1.7		17.4908	1.9	0.5018	3.5	0.0637	3	0.85	397.8	11.5	412.9	11.9	498.2	41.1	397.8	11.5	NA
PFS-26	154	11889	1.2		9.7753	1.6	3.8663	2.4	0.2741	1.9	0.77	1561.6	26	1606.7	19.7	1666.2	29.1	1666.2	29.1	93.7
PFS-27	271	50977	0.6		18.0645	3.2	0.5892	4.6	0.0772	3.3	0.72	479.3	15.1	470.3	17.1	426.7	70.6	479.3	15.1	112.3
PFS-28	175	56216	1.6		13.699	1.3	1.5123	2.4	0.1503	2	0.83	902.4	16.7	935.4	14.6	1013.9	26.7	902.4	16.7	89
PFS-29	477	145253	1		17.4945	1.2	0.6062	3.8	0.0769	3.7	0.95	477.7	16.8	481.2	14.7	497.7	26	477.7	16.8	96

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)	
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	206Pb*	±	207Pb*	±	206Pb*				±
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)					
PFS-30	48	21576	0.6	12.8792	3.8	2.101	4.1	0.1963	1.6	0.39	1155.1	17.1	1149.1	28.3	1137.8	75.1	1137.8	75.1	101.5		
PFS-31	76	25389	1.7	13.957	3.4	1.5918	3.9	0.1611	2	0.5	963.1	17.5	967	24.3	976	68.6	963.1	17.5	98.7		
PFS-32	377	52746	0.8	11.2016	0.6	2.4981	5.9	0.2029	5.9	1	1191.1	64.2	1271.5	43	1410	11.2	1410	11.2	84.5		
PFS-33	721	61213	1	16.9779	5.1	0.5877	5.6	0.0724	2.5	0.44	450.4	10.7	469.4	21.2	563.4	110.5	450.4	10.7	79.9		
PFS-34	336	81579	1.1	17.7072	1.7	0.6141	3.3	0.0789	2.8	0.85	489.3	13	486.1	12.6	471.1	38.4	489.3	13	103.9		
PFS-35	700	54662	24.4	16.7558	1.5	0.6371	2.2	0.0774	1.6	0.73	480.7	7.5	500.5	8.8	592	33.1	480.7	7.5	81.2		
PFS-36	68	2059	1.3	20.3229	54.2	0.0844	54.8	0.0124	8.2	0.15	79.7	6.5	82.3	43.3	157.6	1363.7	79.7	6.5	NA		
PFS-37	928	104714	2.5	16.8378	5.2	0.4413	17.6	0.0539	16.9	0.96	338.4	55.6	371.2	54.9	581.4	112.1	338.4	55.6	NA		
PFS-38	725	97305	1.5	17.4633	1.4	0.599	2.5	0.0759	2.1	0.84	471.4	9.5	476.6	9.5	501.7	30.2	471.4	9.5	94		
PFS-39	740	234446	1.4	17.2749	0.8	0.6173	3.8	0.0773	3.7	0.98	480.2	16.9	488.1	14.5	525.5	18	480.2	16.9	91.4		
PFS-40	276	70512	1.1	17.3388	2.2	0.6032	4	0.0759	3.3	0.83	471.3	14.9	479.3	15.1	517.4	48.6	471.3	14.9	91.1		
PFS-41	683	91840	1.3	17.5353	1.2	0.6029	1.8	0.0767	1.4	0.77	476.3	6.4	479.1	6.9	492.6	25.6	476.3	6.4	96.7		
PFS-42	821	617929	0.7	9.9547	0.2	3.7564	1.1	0.2712	1.1	0.98	1546.9	15.4	1583.5	9.2	1632.5	4.3	1632.5	4.3	94.8		
PFS-44	111	56411	1.7	13.6753	1.7	1.58	2.4	0.1567	1.7	0.72	938.5	14.9	962.4	14.8	1017.4	33.7	938.5	14.9	92.2		
PFS-45	240	96194	1.4	15.143	1.4	0.906	9.2	0.0995	9.1	0.99	611.5	52.9	654.9	44.3	807.5	29.9	611.5	52.9	75.7		
PFS-46	220	52486	0.9	17.5425	2.8	0.586	3.6	0.0746	2.3	0.63	463.5	10.2	468.3	13.5	491.7	61.5	463.5	10.2	94.3		
PFS-47	83	36764	0.9	10.2545	1.3	3.38	3.8	0.2514	3.6	0.94	1445.6	46.1	1499.8	29.7	1577.2	24.6	1577.2	24.6	91.7		
PFS-48	108	18329	0.9	17.8176	4.9	0.5887	5.8	0.0761	3.1	0.54	472.6	14.1	470	21.7	457.3	107.9	472.6	14.1	103.4		
PFS-49	824	138921	2.2	17.4811	1.2	0.6043	1.6	0.0766	1.1	0.68	475.9	5	480	6.1	499.4	26	475.9	5	95.3		
PFS-50	573	117081	1.9	15.9994	4.7	0.8078	5.4	0.0937	2.6	0.49	577.6	14.5	601.2	24.5	691.3	100.5	577.6	14.5	83.5		
PFS-51	3315	104749	2.9	17.4673	0.4	0.423	29.1	0.0536	29.1	1	336.5	95.3	358.2	87.9	501.2	7.8	336.5	95.3	NA		
PFS-52	48	1786	1.1	13.9137	51.4	0.0891	54.8	0.009	18.9	0.34	57.7	10.8	86.6	45.5	982.3	1124.5	57.7	10.8	NA		
PFS-54	506	163249	3.6	15.206	0.6	1.0287	1.2	0.1135	1.1	0.88	692.8	7.2	718.3	6.4	798.8	12.5	692.8	7.2	86.7		
PFS-57	306	47949	1.2	17.825	1.2	0.612	2.4	0.0791	2	0.86	490.9	9.5	484.8	9.1	456.4	27.1	490.9	9.5	107.6		
PFS-59	141	84276	1	10.0209	0.8	3.8503	3.1	0.2798	3	0.96	1590.5	41.7	1603.3	24.7	1620.2	15.1	1620.2	15.1	98.2		
PFS-60	409	492	11	3.3948	118	0.0212	121.6	0.0005	28.9	0.24	3.4	1	21.3	25.6	3441.9	1082.2	3.4	1	NA		

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
PFS-61	586	80279	2.6	17.5116	1.8	0.3481	3.6	0.0442	3.2	0.88	278.9	8.7	303.3	9.5	495.6	38.6	278.9	8.7	NA	
PFS-62	387	180570	1.4	17.5678	2.7	0.5986	6.8	0.0763	6.3	0.92	473.9	28.6	476.4	26	488.5	60.5	473.9	28.6	97	
PFS-63	62	53043	1.7	9.9482	2.1	3.2549	8.6	0.2348	8.3	0.97	1359.8	101.8	1470.3	66.6	1633.7	39.2	1633.7	39.2	83.2	
PFS-64	2191	69472	1.9	17.3594	1.8	0.3036	7	0.0382	6.8	0.97	241.8	16.1	269.2	16.6	514.8	39.5	241.8	16.1	NA	
PFS-65	156	25765	1.6	17.0901	4.3	0.6132	4.7	0.076	1.9	0.41	472.2	8.7	485.6	18.2	549.1	94.4	472.2	8.7	86	
PFS-66	126	25128	0.9	18.2063	4.8	0.5902	5	0.0779	1.6	0.32	483.7	7.4	471	18.9	409.2	106.4	483.7	7.4	118.2	
PFS-67	221	5292	535.8	27.009	32.5	0.0524	32.9	0.0103	5.1	0.16	65.8	3.4	51.8	16.6	-554.7	894	65.8	3.4	NA	
PFS-72	482	83093	1.4	13.8103	0.7	1.3867	2.3	0.1389	2.2	0.96	838.4	17	883.3	13.4	997.5	13.2	838.4	17	84.1	
PFS-74	289	20432	1.6	17.2478	2.7	0.5592	4.2	0.0699	3.2	0.77	435.8	13.6	451	15.3	529	58.6	435.8	13.6	82.4	
PFS-75	64	4345	1.3	11.8761	4.4	2.2672	9.9	0.1953	8.9	0.9	1149.9	93.3	1202.1	69.8	1297.2	85.8	1297.2	85.8	88.6	
PFS-76	65	1124	2	15.4552	20.4	0.5543	21.4	0.0621	6.5	0.3	388.6	24.4	447.8	77.5	764.7	433.3	388.6	24.4	NA	
PFS-77	553	19110	2.8	20.3861	13.8	0.0497	14.1	0.0073	3.2	0.22	47.2	1.5	49.2	6.8	150.3	323.9	47.2	1.5	NA	
PFS-79	1135	10743	11.7	12.7884	17.1	0.0743	21.3	0.0069	12.7	0.6	44.2	5.6	72.7	15	1151.8	342.1	44.2	5.6	NA	
PFS-80	1135	538501	1.1	17.4589	0.7	0.6317	1.8	0.08	1.7	0.92	496.1	8	497.2	7.1	502.2	15.9	496.1	8	98.8	
PFS-81	2637	192031	9.4	17.8572	1	0.2746	26.2	0.0356	26.2	1	225.3	58	246.4	57.4	452.3	21.5	225.3	58	NA	
PFS-82	425	44884	2.5	17.3298	1.4	0.5459	5.3	0.0686	5.2	0.97	427.8	21.3	442.3	19.1	518.5	30.6	427.8	21.3	82.5	
PFS-83	2954	174485	1.3	17.397	0.3	0.6118	1.5	0.0772	1.5	0.98	479.4	6.8	484.7	5.8	510.1	6.6	479.4	6.8	94	
PFS-84	1082	877563	2.4	9.468	0.2	4.1745	1.5	0.2867	1.5	0.99	1624.8	21.8	1669	12.6	1725.1	4.4	1725.1	4.4	94.2	
PFS-85	350	8912	2.4	21.2133	13.2	0.0507	13.3	0.0078	2.2	0.16	50.1	1.1	50.2	6.5	56.3	314.8	50.1	1.1	NA	
PFS-86	148	15219	1.3	13.419	3	1.6151	6.2	0.1572	5.5	0.88	941.1	47.8	976.1	39	1055.6	60	941.1	47.8	89.2	
PFS-87	1531	94218	2.3	13.8522	0.2	1.2771	1.8	0.1283	1.8	1	778.2	13.5	835.6	10.5	991.3	3.6	778.2	13.5	78.5	
PFS-88	527	319357	1.4	11.9114	0.3	2.395	2.8	0.2069	2.8	1	1212.3	31.1	1241.1	20.2	1291.4	5.2	1291.4	5.2	93.9	
PFS-89	389	358436	2.6	10.5237	1.5	2.4489	11.4	0.1869	11.3	0.99	1104.7	115.2	1257.1	82.6	1528.5	27.6	1528.5	27.6	72.3	
PFS-90	839	78144	1	17.5368	0.8	0.6045	1.9	0.0769	1.7	0.9	477.5	8	480.1	7.4	492.4	18.5	477.5	8	97	
PFS-91	109	14867	2	17.0489	9.4	0.6308	10.8	0.078	5.4	0.5	484.2	25.1	496.6	42.5	554.3	204.9	484.2	25.1	87.3	
PFS-92	736	34434	9.1	15.9097	2.2	0.7167	3.9	0.0827	3.2	0.82	512.2	15.5	548.7	16.3	703.3	47.3	512.2	15.5	72.8	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
PFS-93	3034	4368	6.1	17.7049	2.3	0.1821	40.2	0.0234	40.2	1	149	59.1	169.8	63	471.3	49.9	149	59.1	NA	
PFS-94	128	30617	0.7	18.0377	5.4	0.604	5.6	0.079	1.6	0.29	490.3	7.7	479.8	21.5	430	119.7	490.3	7.7	114	
PFS-95	110	111383	1.6	5.0112	0.4	12.9393	4.8	0.4703	4.8	1	2484.8	98.8	2675.2	45.4	2822.5	7	2822.5	7	88	
PFS-96	121	39510	1	17.5287	5.7	0.6042	5.9	0.0768	1.3	0.22	477.1	6.1	479.9	22.6	493.4	126.8	477.1	6.1	96.7	
PFS-97	170	39438	1.3	17.2316	2.6	0.6191	3.3	0.0774	2.1	0.63	480.4	9.7	489.3	12.9	531	56.2	480.4	9.7	90.5	
PFS-98	761	165937	1.7	14.5546	1	0.7542	8.6	0.0796	8.5	0.99	493.8	40.4	570.7	37.4	889.9	21	493.8	40.4	55.5	
PFS-100	1653	499929	2	17.3872	0.4	0.633	2.6	0.0798	2.6	0.99	495.1	12.4	498	10.4	511.3	8.9	495.1	12.4	96.8	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)				Isotope ratios						Apparent ages (Ma)									
		206Pb	U/Th		206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±	Best (Ma)	age ± (Ma)	Conc (Ma)
		204Pb			207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NBO904-1	335	177234	8.3		14.4756	0.7	0.9228	3.1	0.0969	3	0.97	596.1	16.9	663.8	14.9	901.2	14.9	596.1	16.9	66.2
NBO904-2	491	103314	0.8		17.4319	1.3	0.4542	2.7	0.0574	2.3	0.87	359.9	8.1	380.2	8.4	505.6	28.4	359.9	8.1	NA
NBO904-3	414	6320	12.5		23.1959	33.7	0.0197	34	0.0033	4.7	0.14	21.3	1	19.8	6.7	-161.2	859	21.3	1	NA
NBO904-4	257	73279	1.6		17.209	3.4	0.4996	14.5	0.0624	14.1	0.97	389.9	53.3	411.4	49.1	533.9	74.1	389.9	53.3	NA
NBO904-5	1659	336316	14.6		15.5376	0.8	0.2784	14.6	0.0314	14.6	1	199.1	28.7	249.4	32.4	753.5	15.9	199.1	28.7	NA
NBO904-7	682	5983	29		15.5489	25.9	0.0131	27.5	0.0015	9.3	0.34	9.5	0.9	13.2	3.6	751.9	555.3	9.5	0.9	NA
NBO904-8	2881	40377	28.1		21.6689	3.6	0.0159	4.7	0.0025	3	0.64	16.1	0.5	16	0.7	5.4	86.9	16.1	0.5	NA
NBO904-9	391	219411	3.7		15.1146	1.2	0.9685	2.3	0.1062	2	0.85	650.4	12.2	687.7	11.5	811.5	25	650.4	12.2	80.2
NBO904-10	171	100046	1.8		17.4519	1.9	0.6438	3	0.0815	2.3	0.78	505	11.4	504.7	11.9	503.1	40.8	505	11.4	100.4
NBO904-11	598	11451	76.3		20.3802	14.2	0.0309	14.6	0.0046	3.5	0.24	29.4	1	30.9	4.5	151.1	333.3	29.4	1	NA
NBO904-12	91	46668	1.2		17.9326	4.5	0.6087	7.3	0.0792	5.8	0.79	491.2	27.2	482.8	28.1	443	100.9	491.2	27.2	110.9
NBO904-13	661	15741	276.8		20.4861	8.9	0.027	26.7	0.004	25.2	0.94	25.8	6.5	27.1	7.1	138.9	209.3	25.8	6.5	NA
NBO904-14	124	171570	3.2		9.1361	0.4	4.6986	4.4	0.3113	4.3	1	1747.3	66.3	1767	36.4	1790.4	7.5	1790.4	7.5	97.6
NBO904-15	471	249194	6.8		11.4401	0.4	2.2259	2.6	0.1847	2.5	0.99	1092.5	25.5	1189.2	18	1369.6	8	1369.6	8	79.8
NBO904-16	767	346792	14.2		14.6482	1.6	0.8324	4.1	0.0884	3.8	0.92	546.2	20	614.9	19.1	876.7	32.8	546.2	20	62.3
NBO904-17	176	115462	2.5		17.4745	2.7	0.6298	12	0.0798	11.7	0.97	495	55.7	496	47.1	500.3	58.9	495	55.7	98.9
NBO904-18	246	3015	16		29.531	41.1	0.0137	41.6	0.0029	6.6	0.16	18.9	1.3	13.9	5.7	-801.4	1207.5	18.9	1.3	NA
NBO904-19	824	26052	8.4		19.3264	4.2	0.0339	16.7	0.0047	16.1	0.97	30.5	4.9	33.8	5.6	274	96.7	30.5	4.9	NA
NBO904-20	318	635582	3.7		10.6429	1.1	2.515	4.9	0.1941	4.8	0.98	1143.7	50.2	1276.4	35.7	1507.3	20.2	1507.3	20.2	75.9
NBO904-21	369	335290	0.7		14.9877	0.8	1.2384	2.3	0.1346	2.1	0.94	814.1	16.4	818.1	12.8	829.1	15.9	814.1	16.4	98.2
NBO904-22	201	2499	5.3		32.0894	105	0.0118	105.9	0.0027	11.7	0.11	17.6	2.1	11.9	12.5	-1043.5	0	17.6	2.1	NA
NBO904-23	386	176261	2.6		15.1559	0.8	0.7103	4	0.0781	3.9	0.98	484.6	18.1	544.9	16.7	805.7	15.9	484.6	18.1	60.1
NBO904-25	199	66658	2.1		17.5935	1.6	0.6138	3.2	0.0783	2.7	0.86	486.1	12.8	486	12.2	485.3	35.2	486.1	12.8	100.2
NBO904-26	297	192044	1.3		15.0049	0.6	1.1794	1.8	0.1284	1.7	0.94	778.5	12.7	791.1	10.1	826.7	13	778.5	12.7	94.2
NBO904-27	342	420759	1.1		14.1049	0.6	1.5186	1.8	0.1553	1.7	0.95	930.9	14.4	937.9	10.8	954.4	11.7	930.9	14.4	97.5
NBO904-28	115	40704	1.2		17.4091	2.7	0.4976	5.8	0.0628	5.2	0.89	392.8	19.8	410.1	19.7	508.5	58.6	392.8	19.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±			206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)			238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NBO904-29	169	41471	1.9	17.66	2.8	0.6307	4.1	0.0808	3	0.74	500.8	14.6	496.5	16.1	476.9	61.3	500.8	14.6	105	
NBO904-30	452	3281	15.5	18.4595	33.1	0.0113	33.4	0.0015	4.8	0.14	9.7	0.5	11.4	3.8	378.2	762.5	9.7	0.5	NA	
NBO904-31	367	313770	0.5	12.2863	0.3	2.2528	1.5	0.2007	1.5	0.98	1179.3	15.8	1197.7	10.5	1230.9	5.9	1230.9	5.9	95.8	
NBO904-32	89	33953	2.2	15.1537	3.6	1.1509	6.8	0.1265	5.8	0.85	767.8	42.3	777.7	37.2	806.1	74.7	767.8	42.3	95.3	
NBO904-33	67	32565	1.7	14.8623	1.3	1.2304	1.9	0.1326	1.4	0.72	802.8	10.4	814.5	10.7	846.6	27.5	802.8	10.4	94.8	
NBO904-34	713	263521	3	17.3644	0.9	0.4796	3.1	0.0604	3	0.96	378.1	10.9	397.8	10.2	514.2	19.1	378.1	10.9	NA	
NBO904-35	312	122241	1	17.4474	0.8	0.6436	3.4	0.0814	3.3	0.97	504.7	15.9	504.5	13.5	503.7	18.4	504.7	15.9	100.2	
NBO904-36	365	105737	2.2	17.3981	1	0.5948	3	0.0751	2.8	0.94	466.5	12.5	473.9	11.2	509.9	22.5	466.5	12.5	91.5	
NBO904-37	467	377673	2.5	14.9875	0.3	1.1456	3.2	0.1245	3.2	0.99	756.5	23	775.1	17.5	829.1	7.1	756.5	23	91.3	
NBO904-38	374	236727	1	17.3669	1	0.6106	2	0.0769	1.8	0.86	477.6	8.1	483.9	7.9	513.8	22.7	477.6	8.1	93	
NBO904-39	659	604876	10	17.4678	0.8	0.6015	1.5	0.0762	1.3	0.86	473.4	5.8	478.2	5.7	501.1	17	473.4	5.8	94.5	
NBO904-40	928	21512	73.8	22.5905	9.5	0.0245	10.6	0.004	4.9	0.46	25.8	1.3	24.6	2.6	-95.8	233.1	25.8	1.3	NA	
NBO904-41	901	256263	3.5	15.0077	0.3	0.6878	3	0.0749	3	1	465.4	13.3	531.5	12.3	826.3	6	465.4	13.3	56.3	
NBO904-42	280	31449	1.5	19.8375	11.5	0.0998	11.8	0.0144	2.5	0.21	91.9	2.3	96.6	10.9	213.9	267.2	91.9	2.3	NA	
NBO904-43	2899	50288	0.6	17.4409	0.5	0.2937	29.8	0.0371	29.8	1	235.1	68.7	261.4	68.7	504.5	10	235.1	68.7	NA	
NBO904-45	268	135256	1.7	14.8515	1	1.2735	4.4	0.1372	4.2	0.97	828.6	33	833.9	24.9	848.1	21.4	828.6	33	97.7	
NBO904-47	376	175365	2.9	15.099	0.5	0.9743	6.2	0.1067	6.2	1	653.5	38.6	690.7	31.3	813.7	11.4	653.5	38.6	80.3	
NBO904-48	490	154979	4.7	17.4745	0.9	0.5301	4.4	0.0672	4.3	0.98	419.1	17.4	431.9	15.4	500.3	19.5	419.1	17.4	83.8	
NBO904-49	943	194205	79.7	18.0565	1.6	0.085	5.6	0.0111	5.4	0.96	71.3	3.8	82.8	4.5	427.6	35.9	71.3	3.8	NA	
NBO904-50	301	303357	1.4	13.6375	0.6	1.626	2.3	0.1608	2.2	0.96	961.4	19.9	980.3	14.6	1023	13.1	961.4	19.9	94	
NBO904-52	2070	511932	2.3	15.0308	0.2	1.0004	8.3	0.1091	8.3	1	667.2	52.6	704	42.2	823.1	4.5	667.2	52.6	81.1	
NBO904-53	303	53532	4	15.475	1.8	0.2781	13.3	0.0312	13.2	0.99	198.1	25.8	249.1	29.5	762	37.1	198.1	25.8	NA	
NBO904-54	153	33629	1	17.2104	1.7	0.49	5.8	0.0612	5.6	0.96	382.7	20.8	404.9	19.5	533.7	36.6	382.7	20.8	NA	
NBO904-55	372	235456	0.8	12.0732	0.5	2.0947	3	0.1834	3	0.99	1085.6	29.6	1147.1	20.6	1265.1	9.1	1265.1	9.1	85.8	
NBO904-56	492	303163	5.7	17.3455	0.6	0.6126	3.4	0.0771	3.4	0.98	478.6	15.5	485.2	13.2	516.5	13	478.6	15.5	92.6	
NBO904-57	181	74654	1.5	17.5428	1.1	0.6527	3.2	0.083	3	0.94	514.2	14.8	510.1	12.8	491.7	24.2	514.2	14.8	104.6	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NBO904-58	58	109753	1	11.0804	1.1	2.9293	4.6	0.2354	4.5	0.97	1362.8	55.4	1389.5	35.1	1430.8	20.7	1430.8	20.7	95.2	
NBO904-59	235	127530	6.1	15.1303	0.7	0.8805	4.4	0.0966	4.3	0.99	594.6	24.4	641.2	20.7	809.3	14.9	594.6	24.4	73.5	
NBO904-60	238	123078	1.9	14.9846	1	1.1326	4.5	0.1231	4.3	0.97	748.3	30.7	769	24.1	829.5	21.3	748.3	30.7	90.2	
NBO904-61	97	298	38.2	2.842	200	0.0439	204.5	0.0009	42.6	0.21	5.8	2.5	43.7	87.6	3715.1	957.6	5.8	2.5	NA	
NBO904-62	1294	549993	0.8	17.3518	0.2	0.5866	3.6	0.0738	3.6	1	459.2	15.8	468.7	13.4	515.7	5.1	459.2	15.8	89	
NBO904-63	147	112141	1.7	14.9466	1.2	1.1315	2.7	0.1227	2.4	0.89	745.9	17.1	768.5	14.7	834.8	26	745.9	17.1	89.3	
NBO904-64	308	334807	1.1	9.5846	0.5	3.851	2.8	0.2677	2.7	0.98	1529.1	37.1	1603.5	22.3	1702.6	9.3	1702.6	9.3	89.8	
NBO904-65	175	82409	1.6	17.3883	1.9	0.5563	4.5	0.0702	4.1	0.91	437.1	17.2	449.1	16.3	511.1	42	437.1	17.2	85.5	
NBO904-67	727	374545	1.9	17.4013	0.6	0.6152	1.6	0.0776	1.5	0.94	482	7	486.8	6.2	509.5	12.3	482	7	94.6	
NBO904-68	220	86352	1.3	17.2333	2.4	0.4905	4.2	0.0613	3.4	0.82	383.6	12.7	405.3	14	530.8	53.1	383.6	12.7	NA	
NBO904-69	2898	225109	8.1	17.3137	0.1	0.7551	5.5	0.0948	5.5	1	583.9	30.9	571.2	24.2	520.6	3.1	583.9	30.9	112.2	
NBO904-70	349	10215	15.5	18.7254	25.7	0.0191	26.9	0.0026	7.8	0.29	16.7	1.3	19.2	5.1	346	590.5	16.7	1.3	NA	
NBO904-72	1665	251794	3.7	17.4166	0.6	0.4549	3.2	0.0575	3.1	0.98	360.1	10.9	380.7	10.1	507.5	12.6	360.1	10.9	NA	
NBO904-73	283	497776	2.6	12.4353	0.5	1.6475	7	0.1486	6.9	1	893.1	58	988.6	44.1	1207.2	10.5	1207.2	10.5	74	
NBO904-74	1576	75403	40.8	16.6894	0.4	0.4554	5.7	0.0551	5.7	1	345.9	19.2	381	18.2	600.6	9.6	345.9	19.2	NA	
NBO904-75	1000	20858	18.9	21.5008	12.8	0.0252	13.3	0.0039	3.7	0.28	25.3	0.9	25.3	3.3	24.1	307.4	25.3	0.9	NA	
NBO904-76	65	48529	2.6	17.4031	4.4	0.6667	4.9	0.0842	2.2	0.45	520.9	11.1	518.7	20	509.3	96.9	520.9	11.1	102.3	
NBO904-77	288	41002	5.8	17.8192	2.9	0.2668	5.6	0.0345	4.8	0.86	218.6	10.4	240.2	12.1	457.1	64.8	218.6	10.4	NA	
NBO904-78	239	179237	1.6	14.9322	0.7	1.2208	1.7	0.1322	1.5	0.9	800.4	11.6	810.1	9.5	836.8	15.1	800.4	11.6	95.7	
NBO904-79	388	714626	11.4	10.0911	1.4	3.1538	5.7	0.2308	5.5	0.97	1338.8	66.4	1445.9	43.7	1607.2	26	1607.2	26	83.3	
NBO904-81	332	3869	69.1	25.6698	26.3	0.021	26.9	0.0039	5.4	0.2	25.2	1.4	21.1	5.6	-419.7	699.1	25.2	1.4	NA	
NBO904-82	436	300951	3.6	10.7709	3.3	2.8391	6.2	0.2218	5.3	0.85	1291.3	61.7	1365.9	46.6	1484.7	61.7	1484.7	61.7	87	
NBO904-83	628	298024	0.9	14.9134	0.4	1.0182	3.2	0.1101	3.2	0.99	673.5	20.5	713	16.5	839.4	7.6	673.5	20.5	80.2	
NBO904-84	960	482054	1.4	17.4515	0.6	0.6177	2.2	0.0782	2.2	0.97	485.3	10.1	488.4	8.6	503.2	12.3	485.3	10.1	96.4	
NBO904-85	106	41687	1.7	17.4957	4.2	0.606	5.1	0.0769	2.9	0.57	477.6	13.4	481.1	19.5	497.6	92.1	477.6	13.4	96	
NBO904-86	2564	37082	38.2	21.189	3.9	0.021	4.7	0.0032	2.6	0.56	20.8	0.5	21.1	1	59.1	93.5	20.8	0.5	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NBO904-87	302	111439	2.8	17.2586	1.4	0.6211	4.7	0.0777	4.5	0.95	482.7	20.9	490.6	18.3	527.6	31	482.7	20.9	91.5	
NBO904-88	359	179692	0.7	17.4008	0.9	0.582	4.4	0.0735	4.3	0.98	456.9	19.1	465.8	16.6	509.6	20.7	456.9	19.1	89.7	
NBO904-89	31	30416	0.7	13.8522	3.9	1.5595	4.5	0.1567	2.2	0.49	938.3	19.4	954.3	28	991.3	80.1	938.3	19.4	94.6	
NBO904-90	745	616885	3.8	11.7225	0.5	2.0629	2.7	0.1754	2.7	0.98	1041.7	25.7	1136.6	18.6	1322.5	9.6	1322.5	9.6	78.8	
NBO904-91	2832	467238	28.6	17.1475	3.3	0.2336	6.6	0.0291	5.7	0.87	184.6	10.4	213.2	12.7	541.7	72.3	184.6	10.4	NA	
NBO904-92	791	296867	12	15.2519	2.5	0.7536	3.7	0.0834	2.8	0.74	516.1	13.7	570.3	16.3	792.5	52.8	516.1	13.7	65.1	
NBO904-93	131	59407	1.1	14.4236	2.8	0.6586	4.7	0.0689	3.8	0.81	429.5	15.9	513.8	19.1	908.6	57.2	429.5	15.9	47.3	
NBO904-94	287	67818	1.6	14.9961	0.8	0.9342	5	0.1016	5	0.99	623.8	29.6	669.9	24.8	827.9	17.5	623.8	29.6	75.3	
NBO904-95	502	90281	20.4	16.4435	2.1	0.1869	4.5	0.0223	4	0.89	142.1	5.7	174	7.3	632.7	44.6	142.1	5.7	NA	
NBO904-96	1077	20997	29.2	23.4818	11.8	0.0177	11.9	0.003	1.4	0.12	19.4	0.3	17.8	2.1	-191.7	295.9	19.4	0.3	NA	
NBO904-97	607	152828	4.4	17.3513	1.1	0.5079	3.4	0.0639	3.2	0.95	399.4	12.5	417	11.6	515.8	23.3	399.4	12.5	NA	
NBO904-98	127	51119	2.1	15.6402	3.2	0.707	5.5	0.0802	4.4	0.81	497.3	21.3	543	23	739.6	67	497.3	21.3	67.2	
NBO904-99	557	203526	1.5	17.4213	0.5	0.6412	4.3	0.081	4.2	0.99	502.2	20.5	503.1	16.9	507	11	502.2	20.5	99.1	
NBO904-100	801	2912	57	19.8135	54.5	0.0064	55.1	0.0009	8	0.15	6	0.5	6.5	3.6	216.7	1360.8	6	0.5	NA	
NBO904-101	649	472325	3.9	17.4188	0.9	0.5557	4.3	0.0702	4.2	0.98	437.4	17.9	448.7	15.7	507.3	20.8	437.4	17.9	86.2	
NBO904-102	292	96273	1.6	17.4677	1	0.6424	2.3	0.0814	2.1	0.89	504.4	10	503.8	9.2	501.1	22.8	504.4	10	100.6	
NBO904-103	760	387832	56.3	15.0268	0.4	0.8409	7.2	0.0916	7.2	1	565.2	39.1	619.6	33.6	823.7	7.7	565.2	39.1	68.6	
NBO904-104	306	91106	1.3	14.9363	0.7	1.2078	1.4	0.1308	1.2	0.85	792.6	8.8	804.2	7.8	836.3	15.5	792.6	8.8	94.8	
NBO904-106	794	441658	15.4	17.4276	0.4	0.5723	2.5	0.0723	2.5	0.99	450.2	10.7	459.5	9.2	506.2	9	450.2	10.7	88.9	
NBO904-107	2907	47167	39.6	21.1003	3.2	0.0273	3.6	0.0042	1.7	0.46	26.9	0.4	27.4	1	69.1	76.6	26.9	0.4	NA	
NBO904-108	627	11208	12.4	22.9395	13.9	0.0244	15.3	0.0041	6.4	0.42	26.2	1.7	24.5	3.7	-133.6	344	26.2	1.7	NA	
NBO904-109	326	301917	1.3	14.0305	0.5	1.2709	3.8	0.1293	3.8	0.99	784	28.2	832.8	21.9	965.3	9.8	784	28.2	81.2	
NBO904-110	412	72345	4.9	17.448	0.9	0.5019	5.7	0.0635	5.6	0.99	396.9	21.5	413	19.2	503.6	20.8	396.9	21.5	NA	
NBO904-111	321	12377	3.2	15.6313	4	0.6603	6	0.0749	4.5	0.75	465.4	20.4	514.8	24.4	740.8	84.6	465.4	20.4	62.8	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NBO904-112	2904	95425	44.7	21.461	2.4	0.0226	3.3	0.0035	2.2	0.67	22.6	0.5	22.7	0.7	28.6	57.7	22.6	0.5	NA	
NBO904-113	351	570862	5.4	14.5644	0.7	1.171	9.3	0.1237	9.3	1	751.8	66	787.1	51.1	888.6	14.8	751.8	66	84.6	
NBO904-114	170	82898	1.3	15.1157	1.3	1.1334	4.5	0.1243	4.3	0.96	755	30.7	769.4	24.3	811.4	27.7	755	30.7	93.1	
NBO904-115	456	183222	1.2	17.4381	0.9	0.6171	2.3	0.078	2.1	0.92	484.5	9.7	488	8.7	504.8	18.8	484.5	9.7	96	
NBO904-116	317	248317	1.7	13.8046	1.7	1.2946	6.9	0.1296	6.7	0.97	785.7	49.3	843.3	39.4	998.3	33.9	785.7	49.3	78.7	
NBO904-117	811	118168	12.4	17.572	2	0.1812	8.2	0.0231	7.9	0.97	147.1	11.6	169.1	12.8	488	44.5	147.1	11.6	NA	
NBO904-118	823	758446	3	15.0344	0.2	1.1626	2.4	0.1268	2.4	1	769.4	17.2	783.2	13	822.6	3.9	769.4	17.2	93.5	
NBO904-119	326	60504	3.4	17.2955	2	0.3536	18.1	0.0444	18	0.99	279.8	49.3	307.4	48.1	522.9	43	279.8	49.3	NA	
NBO904-120	209	132246	1.7	17.2213	1.4	0.6556	4.5	0.0819	4.3	0.95	507.3	21	511.9	18.2	532.3	30.4	507.3	21	95.3	
NBO904-121	300	419193	1.8	14.9955	0.6	1.1528	3.3	0.1254	3.3	0.98	761.5	23.5	778.6	18.1	828	12.1	761.5	23.5	92	
NBO904-122	2889	52060	65.5	21.5277	2.2	0.0245	3.5	0.0038	2.7	0.78	24.6	0.7	24.5	0.8	21.1	52.8	24.6	0.7	NA	
NBO904-123	467	10964	14.1	21.2666	21.2	0.0218	21.6	0.0034	4.6	0.21	21.6	1	21.9	4.7	50.3	509.9	21.6	1	NA	
NBO904-124	352	4334	83.5	22.1725	21.3	0.0235	26.4	0.0038	15.5	0.59	24.3	3.8	23.6	6.2	-50.2	524.1	24.3	3.8	NA	
NBO904-125	36	289	54.5	4.5629	34.9	0.1528	46.6	0.0051	30.9	0.66	32.5	10	144.4	62.8	2974.5	582.8	32.5	10	NA	
NBO904-126	177	59146	1.6	17.4958	1.6	0.6303	7.4	0.08	7.3	0.98	496	34.7	496.3	29.2	497.6	36	496	34.7	99.7	
NBO904-127	564	4758	46	26.0702	45	0.007	45.8	0.0013	8.7	0.19	8.5	0.7	7.1	3.2	-460.4	1241.9	8.5	0.7	NA	
NBO904-128	170	9672	1.9	14.8043	1.9	1.0996	2.8	0.1181	2.1	0.74	719.4	14.3	753.1	15	854.7	39.2	719.4	14.3	84.2	
NBO904-129	1312	535899	20.7	15.4628	0.6	0.8068	11	0.0905	11	1	558.4	58.9	600.7	50	763.6	11.7	558.4	58.9	73.1	
NBO904-130	212	52010	1.3	17.392	1.1	0.627	2.5	0.0791	2.2	0.89	490.7	10.5	494.2	9.7	510.7	24.6	490.7	10.5	96.1	
NBO904-132	1145	193062	15.2	17.4909	0.9	0.246	8.2	0.0312	8.2	0.99	198.1	15.9	223.3	16.5	498.2	18.9	198.1	15.9	NA	
NBO904-133	329	197285	1.2	14.9877	0.5	1.2555	3.6	0.1365	3.6	0.99	824.7	27.6	825.9	20.3	829.1	11.1	824.7	27.6	99.5	
NBO904-134	2153	260115	6.1	17.4074	0.3	0.607	4.3	0.0766	4.2	1	476	19.5	481.7	16.3	508.7	5.6	476	19.5	93.6	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NBO904-135	721	14059	43.3	19.4123	12.3	0.0179	12.6	0.0025	2.6	0.2	16.2	0.4	18	2.2	263.9	283.2	16.2	0.4	NA	
NBO904-136	718	42102	2.4	17.7662	2.9	0.08	5.1	0.0103	4.1	0.82	66.1	2.7	78.1	3.8	463.7	64.5	66.1	2.7	NA	
NBO904-137	205	74763	0.5	17.1555	1.2	0.6934	5.4	0.0863	5.3	0.98	533.5	27.2	534.9	22.6	540.7	26	533.5	27.2	98.7	
NBO904-139	720	236044	10.5	17.35	0.5	0.5425	2.1	0.0683	2.1	0.97	425.7	8.6	440.1	7.6	516	10.6	425.7	8.6	82.5	
NBO904-140	257	77983	1.2	17.2191	1.1	0.6279	4.1	0.0784	4	0.96	486.6	18.6	494.8	16.2	532.6	25.1	486.6	18.6	91.4	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
03250816-1	218	574506	1.8	10.0555	0.6	2.9525	4	0.2153	4	0.99	1257.1	45.2	1395.5	30.3	1613.8	10.4	1613.8	10.4	77.9	
03250816-2	730	1275720	1.4	12.8667	0.3	1.6141	2.7	0.1506	2.7	0.99	904.5	22.5	975.7	16.8	1139.7	5.7	1139.7	5.7	79.4	
03250816-3	98	569	1.5	22.753	27.8	0.0557	29	0.0092	8.3	0.29	59	4.9	55	15.5	-113.5	696	59	4.9	NA	
03250816-5	113	4629	3.3	23.7888	55.2	0.0327	56.5	0.0056	12	0.21	36.3	4.4	32.7	18.2	-224.3	1495.3	36.3	4.4	NA	
03250816-6	326	181370	3.8	16.1327	1	0.9513	2.2	0.1113	2	0.91	680.3	13.1	678.8	11.1	673.6	20.4	680.3	13.1	101	
03250816-7	355	905	1.4	19.7726	8.7	0.0576	11.7	0.0083	7.7	0.66	53.1	4.1	56.9	6.5	221.5	202.4	53.1	4.1	NA	
03250816-8	273	12759	0.6	19.7626	16.9	0.0521	18.3	0.0075	6.9	0.38	47.9	3.3	51.5	9.2	222.7	394.4	47.9	3.3	NA	
03250816-9	393	28842	3.1	12.0944	3.1	1.9853	5.4	0.1741	4.5	0.82	1034.9	42.9	1110.5	36.7	1261.7	60.1	1261.7	60.1	82	
03250816-10	612	247566	3	12.1104	0.5	2.0891	2.8	0.1835	2.8	0.99	1086	28.1	1145.2	19.6	1259.2	9.3	1259.2	9.3	86.2	
03250816-11	220	7349	1	20.6756	9.8	0.0703	10.4	0.0105	3.7	0.36	67.6	2.5	68.9	7	117.2	230.5	67.6	2.5	NA	
03250816-12	157	10816	1.3	19.7589	15.1	0.0811	15.4	0.0116	3.3	0.22	74.5	2.5	79.2	11.7	223.1	350	74.5	2.5	NA	
03250816-13	3152	1434162	1.9	20.4257	0.6	0.1707	2.3	0.0253	2.3	0.97	161	3.6	160	3.5	145.8	13.2	161	3.6	NA	
03250816-15	359	22418	8	21.0758	10.9	0.0471	11.8	0.0072	4.5	0.38	46.2	2.1	46.7	5.4	71.8	259.5	46.2	2.1	NA	
03250816-16	130	5527	1.2	20.6348	37.3	0.0409	39.6	0.0061	13.3	0.33	39.3	5.2	40.7	15.8	121.9	908.3	39.3	5.2	NA	
03250816-17	175	53963	0.8	17.4971	1.4	0.6084	2	0.0772	1.5	0.74	479.4	6.8	482.6	7.7	497.4	29.9	479.4	6.8	96.4	
03250816-18	114	30040	1.5	11.0268	5.2	3.1262	10.7	0.25	9.4	0.87	1438.5	121	1439.2	82.8	1440	100	1440	100	99.9	
03250816-19	146	297965	2.8	10.2788	0.4	3.3273	3.4	0.248	3.4	0.99	1428.4	43.4	1487.5	26.6	1572.8	7.6	1572.8	7.6	90.8	
03250816-20	234	95360	0.5	17.3844	1.7	0.6068	2.4	0.0765	1.7	0.7	475.3	7.6	481.6	9.1	511.7	37.1	475.3	7.6	92.9	
03250816-21	31	21014	0.8	18.5314	10.4	0.5693	10.6	0.0765	2.1	0.19	475.3	9.4	457.5	39.1	369.5	234.8	475.3	9.4	128.6	
03250816-22	73	72186	1	12.8859	1.4	2.0663	3.4	0.1931	3.1	0.91	1138.2	32.5	1137.7	23.5	1136.8	28.6	1136.8	28.6	100.1	
03250816-23	274	58101	1.5	17.3881	2.1	0.5932	3.1	0.0748	2.2	0.72	465.1	9.8	472.9	11.6	511.2	47	465.1	9.8	91	
03250816-24	370	31156	3.2	21.1432	12.1	0.0587	14.6	0.009	8.2	0.56	57.8	4.7	57.9	8.2	64.2	287.9	57.8	4.7	NA	
03250816-25	895	19781	6	20.5111	8.3	0.0457	10.5	0.0068	6.4	0.61	43.7	2.8	45.4	4.6	136	196	43.7	2.8	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
03250816-26	53	67676	1	9.8118	1.2	3.8637	1.8	0.275	1.3	0.75	1565.9	18.4	1606.1	14.2	1659.3	21.4	1659.3	21.4	94.4
03250816-27	77	132831	1.5	10.0396	0.9	3.719	1.8	0.2708	1.6	0.87	1544.9	21.9	1575.5	14.7	1616.7	16.9	1616.7	16.9	95.6
03250816-28	70	97651	1.7	10.0996	1.4	3.6573	2.2	0.2679	1.7	0.78	1530.1	23.6	1562.1	17.7	1605.6	25.9	1605.6	25.9	95.3
03250816-29	73	28610	1.3	15.2305	3.8	0.9008	5.4	0.0995	3.8	0.71	611.5	22.3	652.1	26	795.5	80.3	611.5	22.3	76.9
03250816-31	232	22787	0.3	22.7436	15.2	0.0708	15.5	0.0117	3.1	0.2	74.9	2.3	69.5	10.4	-112.4	376.1	74.9	2.3	NA
03250816-33	216	211011	0.5	17.4178	1.9	0.5977	3.1	0.0755	2.5	0.79	469.2	11.2	475.8	11.9	507.4	42.8	469.2	11.2	92.5
03250816-34	175	38539	1.8	14.961	1.7	1.2022	4.1	0.1304	3.7	0.91	790.4	27.6	801.6	22.7	832.8	36	790.4	27.6	94.9
03250816-36	334	22156	2.4	24.3202	14.3	0.0507	14.5	0.0089	2.3	0.16	57.4	1.3	50.2	7.1	-280.3	365.7	57.4	1.3	NA
03250816-37	78	23163	0.7	18.2806	5.7	0.5674	5.9	0.0752	1.6	0.28	467.6	7.4	456.4	21.7	400.1	127.5	467.6	7.4	116.9
03250816-38	67	38200	1.5	13.7576	2.8	1.6329	3.5	0.1629	2.1	0.59	973	18.8	983	22.2	1005.2	57.8	973	18.8	96.8
03250816-40	643	29832	0.7	21.7904	7.7	0.054	7.9	0.0085	1.5	0.18	54.7	0.8	53.4	4.1	-8	187.1	54.7	0.8	NA
03250816-41	290	29786	0.5	20.9003	5.2	0.1275	7.1	0.0193	4.8	0.67	123.4	5.8	121.8	8.1	91.7	123.6	123.4	5.8	NA
03250816-42	73	42996	0.9	17.8222	4	0.6224	6.4	0.0805	5	0.78	498.8	24	491.4	24.9	456.7	87.8	498.8	24	109.2
03250816-43	1341	82295	0.4	17.2807	0.9	0.3872	7.8	0.0485	7.8	0.99	305.5	23.2	332.4	22.2	524.8	19.3	305.5	23.2	NA
03250816-44	106	72731	2.1	12.9508	1.8	1.5132	5.1	0.1421	4.8	0.93	856.7	38.5	935.7	31.4	1126.7	36.8	856.7	38.5	76
03250816-46	1975	26040	2.9	21.1555	8.2	0.0138	8.6	0.0021	2.9	0.33	13.6	0.4	13.9	1.2	62.8	194.6	13.6	0.4	NA
03250816-47	963	912313	3.4	10.3712	0.1	3.5417	3.4	0.2664	3.4	1	1522.5	46.3	1536.6	27.1	1556	2.8	1556	2.8	97.9
03250816-48	342	95271	1.9	17.5979	0.9	0.5462	4.3	0.0697	4.2	0.98	434.5	17.8	442.5	15.5	484.8	20.3	434.5	17.8	89.6
03250816-49	209	78182	1	17.2454	1.3	0.634	2	0.0793	1.5	0.74	491.9	6.9	498.6	7.8	529.3	29.1	491.9	6.9	92.9
03250816-50	130	6496	0.4	20.9012	24.3	0.079	24.8	0.012	5.3	0.21	76.8	4	77.2	18.5	91.5	582.1	76.8	4	NA
03250816-51	196	110531	0.6	12.708	0.6	2.1627	4	0.1993	4	0.99	1171.7	42.3	1169.1	27.7	1164.3	11.3	1164.3	11.3	100.6
03250816-53	980	30968	1.5	17.564	0.9	0.3119	4.8	0.0397	4.7	0.98	251.1	11.6	275.6	11.6	489	19.6	251.1	11.6	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
3250816-54	200	15936	0.5	23.3838	12.6	0.0604	13.3	0.0102	4.1	0.31	65.7	2.7	59.6	7.7	-181.3	316.3	65.7	2.7	NA	
3250816-56	83	75726	0.5	12.727	1.4	1.9758	2	0.1824	1.5	0.72	1080	14.6	1107.3	13.8	1161.4	28.2	1161.4	28.2	93	
3250816-57	656	5714	1	21.275	10.8	0.0566	11	0.0087	2.1	0.19	56.1	1.2	55.9	6	49.4	259.5	56.1	1.2	NA	
3250816-58	499	1077569	0.6	9.907	0.2	3.8771	1.7	0.2786	1.7	0.99	1584.2	23.3	1608.9	13.5	1641.4	3.3	1641.4	3.3	96.5	
3250816-59	162	73266	1.3	13.2043	0.8	1.7882	2.2	0.1712	2	0.93	1019	18.9	1041.2	14.1	1088	16.3	1088	16.3	93.7	
3250816-60	100	134799	0.9	10.1826	0.9	3.7323	3	0.2756	2.8	0.95	1569.4	39.4	1578.3	23.8	1590.3	16.7	1590.3	16.7	98.7	
3250816-61	57	1876	0.8	20.6085	44.5	0.0509	47.2	0.0076	15.8	0.33	48.8	7.7	50.4	23.2	124.9	1096.7	48.8	7.7	NA	
3250816-63	79	3976	1	23.259	50.3	0.0506	51.2	0.0085	9.3	0.18	54.8	5.1	50.1	25.1	-167.9	1329.4	54.8	5.1	NA	
3250816-64	302	366461	14	16.3043	0.5	0.876	2	0.1036	1.9	0.97	635.4	11.4	638.8	9.2	651	10.5	635.4	11.4	97.6	
3250816-65	256	9562	1.5	22.7491	19.5	0.0501	20.3	0.0083	5.9	0.29	53.1	3.1	49.7	9.8	-113	482.9	53.1	3.1	NA	
3250816-66	347	134219	1.5	17.4088	1	0.605	1.4	0.0764	1	0.69	474.5	4.4	480.4	5.4	508.5	22.3	474.5	4.4	93.3	
3250816-67	179	15472	1.5	21.0541	13.9	0.1177	14.1	0.018	2.6	0.18	114.8	3	113	15.1	74.3	331.8	114.8	3	NA	
3250816-68	647	449091	0.7	10.081	0.2	3.88	1.3	0.2837	1.3	0.99	1609.9	18.2	1609.5	10.4	1609	2.9	1609	2.9	100.1	
3250816-69	70	50310	1.2	13.8599	2.1	1.5545	2.6	0.1563	1.5	0.58	935.9	12.9	952.3	15.9	990.2	42.6	935.9	12.9	94.5	
3250816-70	531	41313	0.5	20.9896	5.9	0.0762	6.7	0.0116	3.1	0.46	74.3	2.3	74.5	4.8	81.5	140.3	74.3	2.3	NA	
3250816-71	155	25082	1.8	19.0985	8.3	0.3034	8.5	0.042	1.9	0.22	265.3	4.9	269	20.1	301.2	188.8	265.3	4.9	NA	
3250816-72	1700	41825	2.6	21.1042	4.4	0.0415	5.7	0.0064	3.5	0.63	40.8	1.4	41.3	2.3	68.6	104.9	40.8	1.4	NA	
3250816-73	68	29482	0.9	12.9045	1.2	1.6678	4.2	0.1561	4.1	0.96	935	35.4	996.4	26.9	1133.9	23.9	1133.9	23.9	82.5	
3250816-74	46	37483	1.5	13.7204	2.4	1.6631	2.9	0.1655	1.7	0.58	987.2	15.3	994.6	18.4	1010.7	48	987.2	15.3	97.7	
3250816-75	222	193230	3.4	13.7612	0.8	1.6432	1.9	0.164	1.7	0.91	979	15.5	986.9	11.8	1004.7	15.8	979	15.5	97.4	
3250816-76	627	28435	0.8	21.3769	7.8	0.0783	12.4	0.0121	9.7	0.78	77.8	7.5	76.6	9.2	38	186.8	77.8	7.5	NA	
3250816-78	605	1110646	2.7	10.7436	0.2	3.1629	1.8	0.2465	1.8	0.99	1420.2	23.4	1448.2	14.2	1489.5	3.6	1489.5	3.6	95.3	
3250816-79	253	18206	1	20.1483	10.7	0.1052	10.9	0.0154	2.1	0.19	98.3	2	101.5	10.5	177.8	250.5	98.3	2	NA	
3250816-80	941	250896	12.6	17.274	0.5	0.5479	2.3	0.0686	2.2	0.97	428	9.2	443.6	8.3	525.6	11.9	428	9.2	81.4	
3250816-81	2385	30859	0.6	21.2251	3.1	0.031	8	0.0048	7.4	0.92	30.7	2.3	31	2.5	55	73.2	30.7	2.3	NA	
3250816-82	206	114755	2.9	13.7786	1	1.4991	2.4	0.1498	2.2	0.91	899.9	18.8	930	14.9	1002.1	20.1	899.9	18.8	89.8	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
3250816-83	438	35216	0.4	21.0428	4.9	0.1106	5.2	0.0169	1.7	0.33	107.9	1.8	106.5	5.2	75.5	115.8	107.9	1.8	NA	
3250816-84	738	248968	3.2	19.5493	1.5	0.2414	4	0.0342	3.7	0.93	217	7.9	219.6	7.9	247.7	33.5	217	7.9	NA	
3250816-85	90	5062	0.7	16.8523	8.9	0.5729	9.3	0.07	2.6	0.28	436.3	11.1	459.9	34.3	579.6	193.6	436.3	11.1	75.3	
3250816-86	370	8919	1	21.7805	13.4	0.0401	13.8	0.0063	3.5	0.25	40.7	1.4	39.9	5.4	-7	324	40.7	1.4	NA	
3250816-87	1241	23008	1.7	22.6303	5.3	0.0375	5.5	0.0062	1.2	0.22	39.6	0.5	37.4	2	-100.2	130.9	39.6	0.5	NA	
3250816-88	313	16086	32	17.298	17.8	0.0174	58.8	0.0022	56	0.95	14.1	7.9	17.6	10.2	522.6	392.5	14.1	7.9	NA	
3250816-89	86	69635	1.1	9.935	0.7	3.8649	2.2	0.2785	2.1	0.95	1583.8	29	1606.4	17.6	1636.2	12.9	1636.2	12.9	96.8	
3250816-90	342	385858	1.1	12.6607	0.4	2.2102	3.3	0.2029	3.3	0.99	1191.1	35.7	1184.3	23.1	1171.8	7.9	1171.8	7.9	101.7	
3250816-91	232	33127	0.5	21.4787	7.9	0.1109	8.2	0.0173	2.1	0.26	110.4	2.3	106.8	8.3	26.6	189.7	110.4	2.3	NA	
3250816-92	488	36970	1	21.2993	3	0.0776	3.7	0.012	2.2	0.58	76.8	1.7	75.9	2.7	46.7	72.5	76.8	1.7	NA	
3250816-94	382	3186	0.3	20.6808	33.5	0.0248	34.2	0.0037	6.6	0.19	24	1.6	24.9	8.4	116.6	811.2	24	1.6	NA	
3250816-95	102	121298	1	10.2962	0.7	3.5785	3.3	0.2672	3.2	0.98	1526.7	43.2	1544.8	25.8	1569.6	13	1569.6	13	97.3	
3250816-96	408	14767	1.5	20.7588	7.6	0.0801	8.2	0.0121	2.9	0.36	77.3	2.3	78.2	6.1	107.8	179.8	77.3	2.3	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
3250816-97	79	2968	1	15.2288	27	0.078	27.5	0.0086	5.1	0.18	55.3	2.8	76.3	20.2	795.7	576.6	55.3	2.8	NA	
3250816-98	47	29969	0.9	12.587	2.6	2.118	3	0.1934	1.5	0.5	1139.5	15.7	1154.7	20.7	1183.3	51.2	1183.3	51.2	96.3	
3250816-99	583	826014	1.3	9.9156	0.1	3.9896	1.9	0.2869	1.9	1	1626.1	27.3	1632.1	15.5	1639.8	1.3	1639.8	1.3	99.2	
3250816-100	129	360258	1.4	10.1249	0.7	3.7492	1.1	0.2753	0.8	0.76	1567.7	11.1	1581.9	8.4	1600.9	12.8	1600.9	12.8	97.9	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NB0404-1	821	172023	0.7	20.6603	5.4	0.1112	5.8	0.0167	2.1	0.37	106.5	2.3	107	5.9	118.9	127.1	106.5	2.3	NA	
NB0404-2	532	5168	0.6	21.5401	15.1	0.072	17	0.0112	7.9	0.47	72.1	5.7	70.6	11.6	19.8	364	72.1	5.7	NA	
NB0404-3	944	59695	1.5	20.2216	3	0.1196	3.3	0.0175	1.5	0.45	112.1	1.7	114.7	3.6	169.3	69.8	112.1	1.7	NA	
NB0404-4	902	19258	3.9	20.0582	6.3	0.0552	7.2	0.008	3.6	0.5	51.5	1.8	54.5	3.8	188.2	146	51.5	1.8	NA	
NB0404-5	72	144662	2	9.5334	1.2	4.2528	3.9	0.2941	3.7	0.95	1661.7	54	1684.3	32	1712.4	22.8	1712.4	22.8	97	
NB0404-6	363	174021	3.4	13.9639	1.2	1.5381	5.7	0.1558	5.6	0.98	933.2	48.7	945.7	35.3	975	24	933.2	48.7	95.7	
NB0404-7	2011	22310	2.6	20.3278	2.4	0.1265	5.5	0.0186	5	0.9	119.1	5.8	120.9	6.3	157.1	55.2	119.1	5.8	NA	
NB0404-8	175	14541	1.6	24.7945	36.6	0.0615	37.1	0.0111	6	0.16	70.9	4.2	60.6	21.9	-329.7	969.4	70.9	4.2	NA	
NB0404-9	501	23561	1.4	22.5711	14.6	0.0692	15.1	0.0113	3.5	0.23	72.6	2.6	68	9.9	-93.7	361.1	72.6	2.6	NA	
NB0404-10	893	1297	0.8	19.9899	13.8	0.0476	14.9	0.0069	5.5	0.37	44.3	2.4	47.2	6.8	196.2	321.8	44.3	2.4	NA	
NB0404-12	1870	40433	1.4	20.3612	2.7	0.1182	2.9	0.0175	1.1	0.36	111.5	1.2	113.4	3.2	153.2	64.3	111.5	1.2	NA	
NB0404-13	736	20549	2.2	21.4342	14.7	0.0537	14.9	0.0083	2.2	0.15	53.5	1.2	53.1	7.7	31.6	354.7	53.5	1.2	NA	
NB0404-14	317	4915	0.7	26.4101	19.6	0.0608	20.1	0.0116	4.6	0.23	74.6	3.4	59.9	11.7	-494.7	524.2	74.6	3.4	NA	
NB0404-15	1411	148567	1.5	21.0292	2.5	0.1073	3.5	0.0164	2.3	0.68	104.7	2.4	103.5	3.4	77.1	60.4	104.7	2.4	NA	
NB0404-16	333	7820	0.6	18.6174	16.2	0.0794	16.7	0.0107	4.1	0.25	68.8	2.8	77.6	12.5	359	367.9	68.8	2.8	NA	
NB0404-17	893	21835	2.1	20.3033	9.1	0.0743	9.4	0.0109	2.6	0.28	70.1	1.8	72.7	6.6	159.9	212.4	70.1	1.8	NA	
NB0404-18	361	14518	1.8	19.5019	11.4	0.12	12	0.017	3.8	0.31	108.5	4.1	115.1	13.1	253.3	263.1	108.5	4.1	NA	
NB0404-19	469	19034	1.3	19.6583	8.3	0.1265	9	0.018	3.4	0.38	115.2	3.9	121	10.3	234.9	192.7	115.2	3.9	NA	
NB0404-20	774	23367	1.6	20.7441	6.3	0.1182	6.9	0.0178	2.9	0.43	113.7	3.3	113.5	7.4	109.4	147.7	113.7	3.3	NA	
NB0404-21	417	12481	2.1	23.0164	14.7	0.101	15	0.0169	3	0.2	107.8	3.2	97.7	14	-141.9	365.1	107.8	3.2	NA	
NB0404-22	313	11748	2.3	21.3347	11.9	0.1194	12.1	0.0185	2.2	0.19	118	2.6	114.5	13.1	42.7	284.7	118	2.6	NA	
NB0404-23	367	15529	0.7	21.6495	15.8	0.1053	16	0.0165	2.6	0.16	105.7	2.7	101.6	15.4	7.6	381.3	105.7	2.7	NA	
NB0404-24	578	31277	1	21.1312	5.3	0.1162	5.6	0.0178	1.8	0.33	113.8	2.1	111.6	5.9	65.6	125.3	113.8	2.1	NA	
NB0404-25	1345	79306	2.6	20.5721	2.6	0.1118	4.7	0.0167	4	0.84	106.6	4.2	107.6	4.8	129.1	60.7	106.6	4.2	NA	
NB0404-26	644	98720	1.4	12.7888	2.8	0.6505	15	0.0603	14.8	0.98	377.7	54.2	508.8	60.2	1151.8	56.2	377.7	54.2	NA	
NB0404-28	427	12542	0.8	20.0711	7.2	0.1241	7.6	0.0181	2.4	0.32	115.4	2.8	118.8	8.5	186.7	167.9	115.4	2.8	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NB0404-29	110	2986	1	13.6413	25.1	0.1664	27.4	0.0165	10.8	0.4	105.3	11.3	156.3	39.6	1022.4	516.2	105.3	11.3	NA	
NB0404-30	524	20979	1.2	21.074	4.5	0.1191	5.6	0.0182	3.3	0.6	116.3	3.8	114.2	6	72	106.8	116.3	3.8	NA	
NB0404-31	613	20395	1.9	20.7236	3.5	0.1134	3.7	0.017	1	0.28	108.9	1.1	109	3.8	111.7	83.2	108.9	1.1	NA	
NB0404-32	638	16887	1	20.3809	9.6	0.0785	10	0.0116	2.8	0.28	74.4	2.1	76.7	7.4	151	225.4	74.4	2.1	NA	
NB0404-33	419	19686	2.3	20.2797	9.6	0.1322	10	0.0194	2.9	0.29	124.1	3.5	126.1	11.9	162.6	225.2	124.1	3.5	NA	
NB0404-34	380	33864	1.9	17.2434	2	0.6468	4.9	0.0809	4.5	0.91	501.4	21.5	506.5	19.5	529.5	44.3	501.4	21.5	94.7	
NB0404-35	818	110107	3.5	19.5855	3	0.2364	5.2	0.0336	4.2	0.82	213	8.9	215.5	10.1	243.5	69	213	8.9	NA	
NB0404-36	432	108278	0.8	17.3834	0.6	0.6402	2.1	0.0807	2	0.95	500.4	9.6	502.4	8.3	511.8	14	500.4	9.6	97.8	
NB0404-37	182	61239	2.1	13.9231	1.8	1.2735	5.9	0.1286	5.7	0.96	779.9	41.7	834	33.9	980.9	35.8	779.9	41.7	79.5	
NB0404-38	514	3654	1.1	19.8693	9.2	0.122	9.6	0.0176	2.8	0.29	112.4	3.1	116.9	10.6	210.2	212.6	112.4	3.1	NA	
NB0404-39	337	9605	1.1	20.2053	10.7	0.1184	11.3	0.0174	3.4	0.3	110.9	3.7	113.6	12.1	171.2	251.1	110.9	3.7	NA	
NB0404-40	611	5454	0.9	20.3894	11.6	0.078	11.9	0.0115	2.9	0.24	73.9	2.1	76.3	8.8	150	271.5	73.9	2.1	NA	
NB0404-41	89	191	3.7	15.2686	84.8	0.0857	85.8	0.0095	12.9	0.15	60.9	7.8	83.5	68.9	790.2	2349.1	60.9	7.8	NA	
NB0404-42	315	195714	1.8	10.7153	2.5	2.7979	4.4	0.2174	3.6	0.82	1268.3	41.4	1355	32.9	1494.5	47.8	1494.5	47.8	84.9	
NB0404-43	1207	20208	1	21.614	2.3	0.0758	4.7	0.0119	4.1	0.87	76.1	3.1	74.2	3.4	11.5	56.2	76.1	3.1	NA	
NB0404-44	990	48813	1.8	20.9218	3.4	0.1186	5.2	0.018	3.9	0.76	114.9	4.5	113.8	5.6	89.3	80.4	114.9	4.5	NA	
NB0404-45	779	269645	4.7	13.7766	2.1	0.8478	14.8	0.0847	14.7	0.99	524.2	73.8	623.4	69.1	1002.4	43.1	524.2	73.8	52.3	
NB0404-46	1118	31541	1.1	20.0271	3.6	0.1134	4.4	0.0165	2.5	0.57	105.3	2.6	109.1	4.5	191.9	83.5	105.3	2.6	NA	
NB0404-47	2022	101928	1.1	20.5698	4.3	0.0778	5.1	0.0116	2.7	0.53	74.3	2	76	3.7	129.3	100.7	74.3	2	NA	
NB0404-48	735	12421	1.4	20.8027	7.7	0.1155	8.1	0.0174	2.7	0.33	111.3	3	111	8.5	102.8	181.5	111.3	3	NA	
NB0404-49	790	21284	2.3	20.3993	5.5	0.0771	6.9	0.0114	4.2	0.6	73.1	3	75.4	5	148.9	130.1	73.1	3	NA	
NB0404-50	422	14684	1.4	20.9375	14.4	0.119	14.8	0.0181	3.6	0.24	115.4	4.1	114.2	16	87.5	342.5	115.4	4.1	NA	
NB0404-51	829	25162	0.8	20.8901	6.4	0.0778	7.6	0.0118	4.2	0.55	75.6	3.1	76.1	5.6	92.8	151.4	75.6	3.1	NA	
NB0404-52	403	14702	0.6	21.8639	21.8	0.0719	21.9	0.0114	2.9	0.13	73.1	2.1	70.5	14.9	-16.2	531.3	73.1	2.1	NA	
NB0404-53	477	5161	0.7	19.4261	20.3	0.0805	23.7	0.0113	12.3	0.52	72.7	8.9	78.6	18	262.2	470.1	72.7	8.9	NA	
NB0404-54	713	26773	0.7	21.8584	6.6	0.1051	7	0.0167	2.4	0.35	106.5	2.6	101.5	6.8	-15.6	159	106.5	2.6	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NB0404-55	684	179444	2.1	11.3348	0.6	2.6172	5.6	0.2152	5.6	0.99	1256.2	63.6	1305.5	41.2	1387.3	11.2	1387.3	11.2	90.5	
NB0404-56	805	31189	1.2	20.4833	4.3	0.1196	5.3	0.0178	3.1	0.59	113.5	3.5	114.7	5.7	139.2	100.6	113.5	3.5	NA	
NB0404-57	98	5311	1.2	19.1254	34.7	0.1356	35.8	0.0188	8.8	0.25	120.1	10.5	129.1	43.4	297.9	814	120.1	10.5	NA	
NB0404-58	81	103250	0.5	6.9537	0.7	7.9591	3.9	0.4014	3.9	0.99	2175.5	71.8	2226.4	35.6	2273.6	11.6	2273.6	11.6	95.7	
NB0404-60	867	21646	1.2	22.2389	8.6	0.0712	8.9	0.0115	2	0.22	73.6	1.4	69.9	6	-57.5	210.7	73.6	1.4	NA	
NB0404-61	189	6765	0.8	22.8847	16.7	0.1059	18.2	0.0176	7.2	0.4	112.3	8.1	102.2	17.7	-127.7	415.2	112.3	8.1	NA	
NB0404-62	463	19737	1.4	20.7789	7.2	0.1259	8	0.019	3.7	0.46	121.2	4.4	120.4	9.1	105.4	169.2	121.2	4.4	NA	
NB0404-63	125	64464	1.4	10.4664	1.3	3.1925	3	0.2423	2.7	0.91	1398.9	34.1	1455.3	23.1	1538.8	23.5	1538.8	23.5	90.9	
NB0404-64	449	25711	2.4	20.9847	5.9	0.1514	12.3	0.023	10.7	0.88	146.8	15.6	143.1	16.4	82.1	140.6	146.8	15.6	NA	
NB0404-65	764	20388	1.3	22.7473	10.7	0.0492	11.1	0.0081	3.1	0.28	52.1	1.6	48.7	5.3	-112.8	263.7	52.1	1.6	NA	
NB0404-66	451	1934	0.8	17.7826	23.7	0.0881	24.2	0.0114	4.7	0.19	72.9	3.4	85.8	19.9	461.6	532.5	72.9	3.4	NA	
NB0404-67	359	18676	1.6	20.8717	12.3	0.1147	12.6	0.0174	2.4	0.19	110.9	2.6	110.2	13.1	94.9	292.8	110.9	2.6	NA	
NB0404-68	454	19386	1.2	20.7573	7.6	0.1124	8.1	0.0169	2.6	0.33	108.2	2.8	108.2	8.3	107.9	180.4	108.2	2.8	NA	
NB0404-69	653	21194	2.5	20.8146	6.9	0.1123	7.9	0.017	3.9	0.49	108.4	4.2	108.1	8.1	101.4	163.2	108.4	4.2	NA	
NB0404-70	471	14636	26.3	21.4792	19	0.0701	19.3	0.0109	3.1	0.16	70	2.1	68.8	12.8	26.5	460	70	2.1	NA	
NB0404-71	276	5675	1.4	17.8182	18.7	0.0748	19	0.0097	3.7	0.19	62	2.3	73.2	13.5	457.2	417.8	62	2.3	NA	
NB0404-72	546	32365	1.8	19.8197	4.8	0.1343	5.3	0.0193	2.1	0.39	123.2	2.5	127.9	6.3	216	112.2	123.2	2.5	NA	
NB0404-73	1238	30957	5.8	20.7683	2.4	0.1195	3	0.018	1.8	0.62	115	2.1	114.6	3.2	106.7	55.6	115	2.1	NA	
NB0404-74	80	20901	1.3	14.5873	4.6	1.2224	5.7	0.1293	3.5	0.6	784	25.5	810.9	32.1	885.3	94.9	784	25.5	88.6	
NB0404-75	978	26261	0.8	21.1789	2.3	0.1204	3.1	0.0185	2.1	0.68	118.1	2.5	115.4	3.4	60.2	53.7	118.1	2.5	NA	
NB0404-76	625	19937	1.1	20.2807	3.5	0.1215	4.5	0.0179	2.9	0.65	114.2	3.3	116.4	5	162.5	81.1	114.2	3.3	NA	
NB0404-77	1039	33465	1.8	21.0481	4	0.1178	4.3	0.018	1.6	0.37	114.9	1.8	113.1	4.6	75	95.9	114.9	1.8	NA	
NB0404-78	223	13648	1.6	19.204	16	0.1397	16.9	0.0195	5.2	0.31	124.3	6.5	132.8	21	288.6	368.8	124.3	6.5	NA	
NB0404-79	2307	173825	2.8	19.7638	0.9	0.2274	2.5	0.0326	2.3	0.93	206.8	4.7	208.1	4.6	222.5	20.3	206.8	4.7	NA	
NB0404-80	773	38739	1.2	21.1136	5.9	0.1125	6.3	0.0172	2.1	0.34	110.1	2.3	108.3	6.4	67.6	140.3	110.1	2.3	NA	
NB0404-81	284	9100	2	22.7698	11.2	0.1174	12	0.0194	4.4	0.37	123.7	5.4	112.7	12.8	-115.3	277	123.7	5.4	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NB0404-82	85	59825	0.8	8.5706	1.1	5.4123	4.5	0.3364	4.4	0.97	1869.5	71.1	1886.8	38.7	1905.9	19.8	1905.9	19.8	98.1
NB0404-83	1403	1245421	1.9	5.1121	0.7	14.1799	3.1	0.5257	3	0.97	2723.5	66	2761.8	28.9	2789.9	11.2	2789.9	11.2	97.6
NB0404-84	611	9433	1.1	20.4173	13.2	0.0821	27.4	0.0122	24.1	0.88	77.9	18.6	80.1	21.1	146.8	310.8	77.9	18.6	NA
NB0404-85	321	7176	1.3	20.3823	10	0.1176	10.6	0.0174	3.6	0.34	111.1	3.9	112.9	11.3	150.8	234.3	111.1	3.9	NA
NB0404-86	451	5467	1.3	15.5549	21.3	0.1508	21.5	0.017	2.8	0.13	108.8	3	142.7	28.6	751.1	454.2	108.8	3	NA
NB0404-87	608	54721	8.4	19.0191	3.5	0.1376	19.5	0.019	19.2	0.98	121.2	23	130.9	24	310.7	79.6	121.2	23	NA
NB0404-88	238	254698	1.3	10.3807	0.9	3.293	4.2	0.2479	4.1	0.98	1427.8	52.9	1479.4	33	1554.3	17	1554.3	17	91.9
NB0404-89	2692	75493	4.7	20.4888	1.8	0.1131	5.1	0.0168	4.8	0.93	107.4	5.1	108.8	5.3	138.6	43.4	107.4	5.1	NA
NB0404-90	488	37859	1.5	19.1561	7.8	0.1275	8	0.0177	1.9	0.23	113.2	2.1	121.9	9.2	294.3	177.2	113.2	2.1	NA
NB0404-91	377	10041	1.1	23.2195	22.9	0.0702	23.4	0.0118	4.6	0.2	75.7	3.5	68.9	15.6	-163.7	576.9	75.7	3.5	NA
NB0404-92	534	7775	0.7	20.0874	14	0.0755	14.6	0.011	4.1	0.28	70.5	2.9	73.9	10.4	184.8	328.6	70.5	2.9	NA
NB0404-93	2001	51630	1.6	20.4872	2.7	0.0644	3.4	0.0096	2.1	0.61	61.4	1.3	63.4	2.1	138.7	62.4	61.4	1.3	NA
NB0404-94	840	1582	2	19.3736	11.4	0.1224	11.5	0.0172	1.8	0.16	109.9	2	117.2	12.7	268.4	261.3	109.9	2	NA
NB0404-95	432	8411	0.8	21.7217	14.9	0.0727	15.2	0.0114	3	0.2	73.4	2.2	71.2	10.4	-0.4	360.2	73.4	2.2	NA
NB0404-96	386	3590	0.7	18.2054	14.6	0.1251	16.4	0.0165	7.6	0.46	105.6	8	119.7	18.5	409.3	327	105.6	8	NA
NB0404-97	809	27357	1.8	20.2987	4.7	0.1181	5.3	0.0174	2.3	0.44	111.1	2.6	113.3	5.6	160.5	110.3	111.1	2.6	NA
NB0404-98	1543	968	1.3	19.5145	9.2	0.1133	10	0.016	4	0.4	102.6	4.1	109	10.4	251.8	211.5	102.6	4.1	NA
NB0404-99	327	46918	1.4	16.6586	1.5	0.7646	4	0.0924	3.7	0.93	569.6	20.3	576.7	17.6	604.6	31.4	569.6	20.3	94.2
NB0404-100	517	253086	0.7	14.7561	0.8	1.2704	1.9	0.136	1.7	0.91	821.8	13.4	832.6	10.8	861.5	16	821.8	13.4	95.4
NB0404-101	2725	76895	4.1	20.869	2.3	0.1153	3.4	0.0174	2.5	0.73	111.5	2.7	110.8	3.6	95.2	55.1	111.5	2.7	NA
NB0404-102	464	64455	2.2	17.3601	0.9	0.6476	4.2	0.0815	4.1	0.98	505.3	20.2	507	16.9	514.7	19.1	505.3	20.2	98.2
NB0404-103	626	30771	0.4	20.6164	9.1	0.0794	11.1	0.0119	6.4	0.57	76.1	4.8	77.6	8.3	123.9	213.5	76.1	4.8	NA
NB0404-104	890	82785	1.2	21.4705	4	0.1165	4.3	0.0181	1.6	0.37	115.9	1.8	111.9	4.6	27.5	95.8	115.9	1.8	NA
NB0404-105	1063	655477	36.3	9.9925	0.1	3.8602	1.8	0.2798	1.8	1	1590.1	24.9	1605.4	14.3	1625.5	2.7	1625.5	2.7	97.8
NB0404-106	133	83866	1.1	6.222	0.8	7.0533	5.4	0.3183	5.4	0.99	1781.4	83.3	2118.2	48.1	2463.2	13.1	2463.2	13.1	72.3

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
NB0404-107	1795	129804	100	19.4414	0.7	0.2471	1.3	0.0348	1	0.81	220.8	2.2	224.2	2.5	260.5	17	220.8	2.2	NA	
NB0404-108	178	123691	2.5	14.2738	1.4	1.507	3.3	0.156	2.9	0.91	934.6	25.6	933.2	19.9	930	28.4	934.6	25.6	100.5	
NB0404-109	422	322497	2.6	14.007	0.8	1.4109	6.9	0.1433	6.9	0.99	863.5	55.8	893.5	41.3	968.7	15.8	863.5	55.8	89.1	
NB0404-111	1104	116314	2.3	20.998	7.6	0.0763	8.5	0.0116	3.8	0.45	74.5	2.8	74.7	6.1	80.6	180.3	74.5	2.8	NA	
NB0404-112	677	94071	8.1	20.1139	1.9	0.2294	2.8	0.0335	2.1	0.74	212.2	4.3	209.7	5.3	181.8	43.5	212.2	4.3	NA	
NB0404-113	572	30893	1.3	20.114	6.4	0.1285	7.4	0.0187	3.7	0.5	119.8	4.4	122.8	8.6	181.7	149.5	119.8	4.4	NA	
NB0404-114	504	24278	1.5	21.1069	7.1	0.1162	7.8	0.0178	3.3	0.43	113.7	3.7	111.6	8.2	68.3	168	113.7	3.7	NA	
NB0404-115	1226	53594	10.9	20.8829	2.5	0.1099	3.4	0.0167	2.3	0.68	106.5	2.4	105.9	3.4	93.7	58.5	106.5	2.4	NA	
NB0404-116	527	13159	1.2	20.4491	8.8	0.1316	9.3	0.0195	3.1	0.33	124.6	3.8	125.5	11	143.1	207.3	124.6	3.8	NA	
NB0404-117	1148	4103	1.7	18.3508	13.7	0.1429	15.2	0.019	6.6	0.43	121.4	7.9	135.6	19.3	391.5	309	121.4	7.9	NA	
NB0404-118	1790	138315	5.9	20.5988	1.7	0.115	2.5	0.0172	1.8	0.73	109.8	2	110.5	2.6	126	39.3	109.8	2	NA	
NB0404-119	398	6096	1.6	19.0826	8.4	0.1314	9	0.0182	3.3	0.36	116.2	3.8	125.3	10.6	303.1	190.8	116.2	3.8	NA	
NB0404-120	424	3640	2.3	21.2463	9.8	0.137	14.6	0.0211	10.8	0.74	134.7	14.4	130.4	17.9	52.6	235	134.7	14.4	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
03280836-1	373	267955	0.7	14.5867	0.8	1.3296	1.7	0.1407	1.6	0.89	848.4	12.4	858.7	10.1	885.4	16.3	848.4	12.4	95.8	
03280836-2	432	12472	0.3	25.3453	18.6	0.0314	19.3	0.0058	5.2	0.27	37.1	1.9	31.4	6	-386.5	487.3	37.1	1.9	NA	
03280836-4	956	29189	4.3	21.869	5.2	0.0673	6	0.0107	3	0.5	68.4	2	66.1	3.8	-16.7	125	68.4	2	NA	
03280836-5	634	1639	0.7	20.4353	29.4	0.0516	29.9	0.0076	5.4	0.18	49.1	2.6	51	14.9	144.7	703.2	49.1	2.6	NA	
03280836-6	4627	1687322	3.7	17.4088	0.1	0.6257	1.7	0.079	1.7	1	490.2	7.9	493.4	6.6	508.5	3	490.2	7.9	96.4	
03280836-7	1256	131446	6.4	19.9765	0.9	0.2306	1.5	0.0334	1.2	0.79	211.8	2.5	210.7	2.9	197.7	21.6	211.8	2.5	NA	
03280836-9	74	3484	1.7	12.5738	3.4	2.0392	4.8	0.186	3.3	0.7	1099.5	33.6	1128.7	32.5	1185.4	67.6	1185.4	67.6	92.8	
03280836-10	77	3864	0.8	19.8794	18.3	0.1208	18.5	0.0174	3.3	0.18	111.3	3.6	115.8	20.3	209	426.3	111.3	3.6	NA	
03280836-11	308	71974	2.1	12.8985	2	1.0263	5	0.096	4.5	0.91	591	25.6	717.1	25.6	1134.8	40.1	591	25.6	52.1	
03280836-12	488	96254	2.9	15.0637	1.7	0.7109	7.3	0.0777	7.1	0.97	482.2	32.9	545.3	30.7	818.6	35.1	482.2	32.9	58.9	
03280836-13	1692	281331	21.9	16.1216	0.5	0.854	2.8	0.0999	2.8	0.98	613.6	16.3	626.9	13.3	675.1	10.7	613.6	16.3	90.9	
03280836-14	589	171982	11.2	13.5666	0.5	1.7384	2.3	0.171	2.2	0.97	1017.9	20.9	1022.9	14.7	1033.5	10.3	1033.5	10.3	98.5	
03280836-15	319	156178	0.8	9.7358	0.3	3.855	2.4	0.2722	2.4	0.99	1552	32.6	1604.3	19.2	1673.7	5.4	1673.7	5.4	92.7	
03280836-16	410	23883	23.1	17.5909	5.2	0.246	6.5	0.0314	4	0.61	199.2	7.8	223.3	13.1	485.6	114.3	199.2	7.8	NA	
03280836-17	429	81102	0.9	21.3918	5.7	0.1269	7.1	0.0197	4.2	0.6	125.7	5.3	121.3	8.1	36.3	137	125.7	5.3	NA	
03280836-18	232	61604	106	15.0375	0.7	1.2201	1.6	0.1331	1.4	0.89	805.3	10.8	809.8	8.9	822.2	15.2	805.3	10.8	98	
03280836-19	936	20652	2.2	21.0842	7.2	0.0484	8.3	0.0074	4	0.49	47.6	1.9	48	3.9	70.9	172	47.6	1.9	NA	
03280836-20	116	39336	1.8	17.656	5.1	0.6397	6.5	0.0819	4	0.61	507.5	19.3	502.1	25.7	477.4	113.8	507.5	19.3	106.3	
03280836-21	332	24259	1.3	17.7077	8	0.1364	10.7	0.0175	7.1	0.66	111.9	7.8	129.8	13	471	177.2	111.9	7.8	NA	
03280836-22	468	84522	2	15.7135	1	0.7445	3.4	0.0848	3.2	0.95	525	16.4	565	14.8	729.7	21.9	525	16.4	71.9	
03280836-23	508	59979	1.9	20.166	5	0.1338	5.4	0.0196	2	0.37	124.9	2.5	127.5	6.4	175.7	116.2	124.9	2.5	NA	
03280836-24	1134	9019	51.3	23.3223	15.5	0.0181	16.5	0.0031	5.6	0.34	19.7	1.1	18.3	3	-174.7	389.2	19.7	1.1	NA	
03280836-25	2161	456660	6	17.5777	0.3	0.5901	2.2	0.0752	2.1	0.99	467.6	9.6	470.9	8.1	487.3	6.1	467.6	9.6	96	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
03280836-26	496	10001	1.1	13.2416	1.6	1.4678	9.7	0.141	9.5	0.99	850.1	76	917.2	58.5	1082.4	32.5	850.1	76	78.5	
03280836-27	565	450006	1.6	11.808	0.4	2.4626	1	0.2109	0.9	0.92	1233.6	10.3	1261.1	7.2	1308.4	7.8	1308.4	7.8	94.3	
03280836-28	72	15213	0.9	17.9629	6.5	0.5752	7.4	0.0749	3.6	0.49	465.9	16.4	461.4	27.6	439.2	144.3	465.9	16.4	106.1	
03280836-29	285	11897	0.8	23.7403	15.6	0.0726	16.3	0.0125	4.9	0.3	80	3.9	71.1	11.2	-219.2	393.8	80	3.9	NA	
03280836-30	886	965960	2	11.3806	2.6	2.4553	6.7	0.2027	6.2	0.92	1189.6	67.2	1259	48.4	1379.6	49.4	1379.6	49.4	86.2	
03280836-32	186	63652	4.9	14.0352	1.5	1.3397	2.4	0.1364	1.9	0.77	824.1	14.3	863.1	14	964.6	31.1	824.1	14.3	85.4	
03280836-33	391	113324	0.9	17.5052	1.4	0.5332	2.8	0.0677	2.4	0.86	422.3	9.8	433.9	9.8	496.4	30.6	422.3	9.8	85.1	
03280836-34	1143	226013	1.5	17.5383	0.6	0.6383	1.5	0.0812	1.4	0.91	503.2	6.5	501.2	5.9	492.3	13.7	503.2	6.5	102.2	
03280836-35	1147	58883	4.7	20.6707	2.8	0.1121	3.4	0.0168	1.8	0.55	107.4	1.9	107.9	3.4	117.8	66.2	107.4	1.9	NA	
03280836-37	1510	231746	6.6	18.4604	2.6	0.2755	9.8	0.0369	9.5	0.96	233.5	21.8	247.1	21.6	378.1	58.2	233.5	21.8	NA	
03280836-38	440	10696	1.2	22.4014	13.8	0.0424	14.1	0.0069	3.3	0.23	44.2	1.5	42.1	5.8	-75.2	337.7	44.2	1.5	NA	
03280836-39	387	130718	3.1	13.5754	1.5	0.6069	6.5	0.0598	6.3	0.97	374.2	23.1	481.6	25	1032.2	31.3	374.2	23.1	NA	
03280836-41	147	8749	1	19.3606	11.3	0.1355	17.1	0.019	12.8	0.75	121.5	15.5	129	20.7	270	259	121.5	15.5	NA	
03280836-42	724	42070	1.5	20.43	3.9	0.1279	4.3	0.0189	2	0.46	121	2.4	122.2	5	145.3	90.7	121	2.4	NA	
03280836-43	265	56290	0.7	19.8186	14.1	0.0807	14.5	0.0116	3.4	0.23	74.4	2.5	78.8	11	216.1	328.8	74.4	2.5	NA	
03280836-44	217	185526	0.7	12.6605	0.8	2.0967	1.6	0.1925	1.3	0.85	1135	13.8	1147.7	10.8	1171.8	16.6	1171.8	16.6	96.9	
03280836-45	403	9639	2.2	21.917	34.5	0.0454	35.2	0.0072	7.1	0.2	46.3	3.3	45	15.5	-22	856.2	46.3	3.3	NA	
03280836-46	283	251638	1.2	7.3762	0.4	6.6159	5.3	0.3539	5.3	1	1953.3	89.2	2061.5	46.9	2171.4	6.5	2171.4	6.5	90	
03280836-47	255	37044	1.1	17.8789	3	0.3948	6.2	0.0512	5.4	0.88	321.9	17.1	337.9	17.8	449.6	66.2	321.9	17.1	NA	
03280836-48	166	6158	1.8	23.3614	37.4	0.0454	38.3	0.0077	8.1	0.21	49.4	4	45.1	16.9	-178.9	962.5	49.4	4	NA	
03280836-49	1576	40022	2.7	21.7608	6.7	0.0375	7.7	0.0059	3.8	0.49	38	1.4	37.3	2.8	-4.8	162.1	38	1.4	NA	
03280836-50	196	159236	1.8	13.1102	1.2	1.9431	2.6	0.1848	2.3	0.88	1092.9	22.7	1096.1	17.1	1102.4	24	1102.4	24	99.1	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
03280836-51	424	528	1.7	14.7482	37.5	0.0715	37.9	0.0076	5.6	0.15	49.1	2.7	70.1	25.7	862.6	806	49.1	2.7	NA
03280836-53	632	344572	2.8	11.2798	3	2.4534	11.1	0.2007	10.7	0.96	1179.1	115.8	1258.4	80.6	1396.7	57.1	1396.7	57.1	84.4
03280836-54	119	51037	1.6	10.2017	0.8	3.4716	2.3	0.2569	2.1	0.94	1473.8	28.3	1520.8	18	1586.8	14.4	1586.8	14.4	92.9
03280836-55	142	3125	1.5	11.361	297	0.0991	296.6	0.0082	9.7	0.03	52.4	5.1	95.9	278.2	1382.9	1100.8	52.4	5.1	NA
03280836-56	88	29771	1.2	16.197	4.2	0.6494	6.1	0.0763	4.4	0.73	473.9	20.3	508.1	24.3	665.1	89	473.9	20.3	71.3
03280836-57	206	6168	1	16.6679	32.2	0.0607	32.7	0.0073	5.5	0.17	47.1	2.6	59.8	19	603.4	713.7	47.1	2.6	NA
03280836-58	176	47235	3.6	12.8095	1.5	1.6761	1.9	0.1557	1.3	0.66	932.9	11.1	999.5	12.3	1148.6	29	1148.6	29	81.2
03280836-59	924	477353	9.6	12.6784	0.3	2.0036	2.1	0.1842	2.1	0.99	1090.1	20.6	1116.7	14.1	1169	5.1	1169	5.1	93.3
03280836-61	650	14273	1.5	20.7852	8.6	0.0579	9.5	0.0087	3.9	0.41	56	2.2	57.1	5.3	104.7	204.5	56	2.2	NA
03280836-63	1864	350707	16.6	13.3492	0.4	0.6932	4.7	0.0671	4.7	1	418.8	19.1	534.7	19.6	1066.1	7.2	418.8	19.1	39.3
03280836-64	323	5948	1.8	21.72	28.7	0.0566	29.3	0.0089	6	0.21	57.2	3.4	55.9	15.9	-0.2	703.3	57.2	3.4	NA
03280836-65	225	8932	3	24.4841	29.5	0.054	30.3	0.0096	6.7	0.22	61.6	4.1	53.4	15.7	-297.4	767.5	61.6	4.1	NA
03280836-66	465	21693	1.7	21.4653	4.6	0.1102	5.4	0.0171	2.8	0.52	109.6	3.1	106.1	5.5	28.1	111	109.6	3.1	NA
03280836-67	158	3308	0.7	14.9234	39	0.0918	39.7	0.0099	7.6	0.19	63.8	4.8	89.2	33.9	838	843.8	63.8	4.8	NA
03280836-69	239	108283	1.3	12.5643	0.7	2.1136	7.7	0.1926	7.7	1	1135.5	79.8	1153.3	53.1	1186.9	13.2	1186.9	13.2	95.7
03280836-70	326	11901	4.9	23.6721	39.8	0.0415	40.1	0.0071	4.8	0.12	45.7	2.2	41.3	16.2	-212	1035.6	45.7	2.2	NA
03280836-71	2109	29113	1.6	20.3113	2.8	0.0513	3.5	0.0076	2.1	0.59	48.6	1	50.8	1.7	159	66.4	48.6	1	NA
03280836-72	109	17723	1.1	17.4245	5.1	0.6481	5.5	0.0819	2.2	0.39	507.5	10.6	507.3	22.1	506.6	112.3	507.5	10.6	100.2
03280836-73	157	6654	0.5	25.8488	25.6	0.0991	26.3	0.0186	6.1	0.23	118.7	7.1	96	24.1	-437.9	681.1	118.7	7.1	NA
03280836-74	197	144926	1.8	9.3089	0.5	4.467	1.4	0.3016	1.3	0.94	1699.2	19.9	1724.9	11.8	1756.2	9.1	1756.2	9.1	96.8
03280836-75	70	81948	2.1	10.933	5.7	2.5386	8.7	0.2013	6.5	0.75	1182.3	70.7	1283.2	63.3	1456.3	108.6	1456.3	108.6	81.2
03280836-76	1575	5264	0.6	20.8176	5.7	0.0455	6.5	0.0069	3	0.47	44.2	1.3	45.2	2.9	101.1	135.8	44.2	1.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
03280836-77	3235	3367	13.8	15.8112	4.2	0.0892	5.1	0.0102	2.9	0.57	65.6	1.9	86.8	4.2	716.5	89	65.6	1.9	NA	
03280836-78	267	183403	2.9	12.6533	0.8	2.1206	3.7	0.1946	3.6	0.98	1146.3	38.2	1155.5	25.8	1172.9	16.4	1172.9	16.4	97.7	
03280836-79	931	34451	26.1	21.7668	3.1	0.0683	7.5	0.0108	6.9	0.91	69.1	4.7	67.1	4.9	-5.4	73.6	69.1	4.7	NA	
03280836-80	963	407807	3.1	17.4401	0.9	0.6383	2.4	0.0807	2.2	0.92	500.6	10.4	501.3	9.3	504.6	20.8	500.6	10.4	99.2	
03280836-81	64	179890	0.8	5.7223	3.3	10.5489	5	0.4378	3.7	0.75	2340.8	73.6	2484.2	46.3	2603.7	54.8	2603.7	54.8	89.9	
03280836-82	938	9907	1.1	23.5088	17	0.0246	17.2	0.0042	2.5	0.15	26.9	0.7	24.6	4.2	-194.6	427.9	26.9	0.7	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
TUTING-1	327	152891	0.8	12.6534	0.6	2.0081	1.2	0.1843	1	0.88	1090.4	10.3	1118.3	7.9	1172.9	11	1172.9	11	93	
TUTING-2	138	62087	2	20.567	8.8	0.2211	9.1	0.033	2.4	0.26	209.2	4.8	202.8	16.7	129.6	206.4	209.2	4.8	NA	
TUTING-3	611	1574	1.1	19.0965	14.3	0.0694	15.5	0.0096	6	0.39	61.6	3.7	68.1	10.2	301.4	327.1	61.6	3.7	NA	
TUTING-5	40	15309	0.4	17.0738	6.2	0.6574	6.7	0.0814	2.5	0.37	504.5	12.2	513	27	551.1	135.6	504.5	12.2	91.5	
TUTING-7	424	469421	1.2	14.9834	0.4	1.2055	1.6	0.131	1.5	0.96	793.6	11.3	803.1	8.8	829.7	9.3	793.6	11.3	95.6	
TUTING-8	489	30797	1.7	20.8581	7.8	0.0622	9	0.0094	4.5	0.5	60.4	2.7	61.3	5.3	96.5	183.7	60.4	2.7	NA	
TUTING-9	118	3195	1.2	20.6708	33.3	0.0558	33.8	0.0084	5.6	0.17	53.7	3	55.1	18.1	117.8	805.5	53.7	3	NA	
TUTING-10	447	11009	1.3	25.4455	30.9	0.0237	31.1	0.0044	3.8	0.12	28.2	1.1	23.8	7.3	-396.8	821.3	28.2	1.1	NA	
TUTING-11	84	43854	1.3	16.034	3.6	0.8668	3.9	0.1008	1.6	0.4	619.1	9.2	633.8	18.4	686.7	76.2	619.1	9.2	90.1	
TUTING-13	561	61594	8.8	19.8449	3.2	0.2095	4.1	0.0302	2.5	0.61	191.5	4.7	193.1	7.2	213	74.7	191.5	4.7	NA	
TUTING-14	16	8446	0.9	13.4667	6	1.8214	7.7	0.1779	4.8	0.63	1055.5	46.9	1053.2	50.3	1048.5	120.5	1048.5	120.5	100.7	
TUTING-15	3073	16739	0.4	20.273	1.6	0.2243	13.6	0.033	13.5	0.99	209.2	27.8	205.5	25.3	163.4	37.8	209.2	27.8	NA	
TUTING-16	407	220207	1.7	11.7275	0.9	2.6217	2.3	0.223	2.1	0.92	1297.6	24.8	1306.7	16.8	1321.7	17	1321.7	17	98.2	
TUTING-17	1119	217364	0.9	17.3788	0.6	0.6092	1.2	0.0768	1.1	0.88	476.9	4.9	483	4.6	512.3	12.5	476.9	4.9	93.1	
TUTING-18	154	6672	2.7	21.4007	25.9	0.0696	26.5	0.0108	5.8	0.22	69.3	4	68.3	17.5	35.3	628.6	69.3	4	NA	
TUTING-19	166	102446	1.6	12.7881	0.7	1.9805	4.6	0.1837	4.6	0.99	1087.1	45.7	1108.9	31.1	1151.9	13	1151.9	13	94.4	
TUTING-20	725	24428	0.8	20.8525	8.6	0.0483	8.9	0.0073	2.4	0.27	46.9	1.1	47.9	4.2	97.1	203.4	46.9	1.1	NA	
TUTING-21	1498	73950	0.8	20.3768	2.7	0.1221	3	0.018	1.2	0.41	115.3	1.4	116.9	3.3	151.4	63.9	115.3	1.4	NA	
TUTING-22	85	3766	0.6	4.1503	505	0.2059	505.5	0.0062	10.1	0.02	39.8	4	190.1	1326	3126.2	181.9	39.8	4	NA	
TUTING-23	68	36988	1.1	14.3648	2.8	1.2543	5.1	0.1307	4.2	0.83	791.7	31.6	825.3	28.8	917	58.1	791.7	31.6	86.3	
TUTING-24	2489	4123	2.6	20.544	4.7	0.0665	7.9	0.0099	6.4	0.81	63.6	4	65.4	5	132.3	109.4	63.6	4	NA	
TUTING-26	187	83870	0.4	16.6078	1.2	0.7842	1.7	0.0945	1.2	0.69	581.9	6.6	587.9	7.7	611.2	27	581.9	6.6	95.2	
TUTING-27	405	19471	2	22.3178	13.9	0.0431	14.3	0.007	3.6	0.25	44.9	1.6	42.9	6	-66.1	339.9	44.9	1.6	NA	

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±			
				207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
TUTING-28	104	63899	1.1	9.9051	0.7	4.0652	2.9	0.292	2.9	0.97	1651.7	41.7	1647.4	23.9	1641.8	12.4	1641.8	12.4	100.6
TUTING-30	52	40759	0.6	12.6137	1.7	2.1867	2.4	0.2	1.7	0.7	1175.6	17.8	1176.8	16.4	1179.1	33.2	1179.1	33.2	99.7
TUTING-31	66	9271	0.8	21.2761	20.7	0.1182	21.3	0.0182	5	0.24	116.6	5.8	113.5	22.9	49.3	499.9	116.6	5.8	NA
TUTING-32	91	4313	1.9	23.5851	48.1	0.0599	48.6	0.0102	7	0.14	65.7	4.6	59.1	27.9	-202.7	1271.9	65.7	4.6	NA
TUTING-33	232	19809	1	20.5073	8.7	0.1228	8.8	0.0183	1.1	0.12	116.7	1.3	117.6	9.7	136.4	204.5	116.7	1.3	NA
TUTING-34	353	302933	5.1	14.0289	0.6	1.5858	1.5	0.1614	1.4	0.92	964.3	12.2	964.7	9.2	965.5	11.5	964.3	12.2	99.9
TUTING-36	276	79951	3.7	17.5492	1.7	0.5991	1.8	0.0762	0.6	0.34	473.7	2.8	476.6	6.8	490.8	36.8	473.7	2.8	96.5
TUTING-37	461	10713	8.4	18.8054	16.7	0.0252	28.2	0.0034	22.7	0.81	22.1	5	25.3	7	336.3	381.1	22.1	5	NA
TUTING-39	766	141871	72.5	16.8237	0.5	0.7147	1.3	0.0872	1.2	0.91	539	6.3	547.5	5.6	583.2	11.6	539	6.3	92.4
TUTING-40	194	20582	0.8	21.5905	7.5	0.1118	7.9	0.0175	2.3	0.3	111.9	2.6	107.6	8.1	14.1	181.1	111.9	2.6	NA
TUTING-40_2	145	192302	1.1	9.6721	0.3	4.2284	0.9	0.2966	0.9	0.96	1674.5	12.7	1679.5	7.4	1685.8	4.9	1685.8	4.9	99.3
TUTING-41	319	11937	6.8	20.8345	12.9	0.0401	13.3	0.0061	3.3	0.25	39	1.3	40	5.2	99.1	306.6	39	1.3	NA
TUTING-42	617	16053	1.1	10.3996	0.2	2.0891	3.3	0.1576	3.3	1	943.3	29	1145.2	22.7	1550.8	4.4	1550.8	4.4	60.8
TUTING-44	403	114147	10.8	15.0198	0.5	0.6372	8.6	0.0694	8.6	1	432.6	36.1	500.6	34.1	824.6	10.3	432.6	36.1	52.5
TUTING-47	816	184230	0.8	17.4633	0.4	0.6091	3.2	0.0771	3.2	0.99	479	14.8	483	12.5	501.7	9.2	479	14.8	95.5
TUTING-48	179	4445	1.9	23.2598	38.4	0.0361	39.2	0.0061	8	0.2	39.1	3.1	36	13.9	-168	986.9	39.1	3.1	NA
TUTING-49	378	450	0.7	15.0438	38.2	0.0301	45.7	0.0033	25.1	0.55	21.2	5.3	30.2	13.6	821.3	827	21.2	5.3	NA
TUTING-51	65	50142	1	9.7148	5	3.6992	20	0.2606	19.4	0.97	1493.1	258.6	1571.2	161.4	1677.7	92.5	1677.7	92.5	89
TUTING-53	474	2342	2.8	21.3673	22.4	0.0251	25.3	0.0039	11.7	0.46	25	2.9	25.1	6.3	39.1	542.8	25	2.9	NA
TUTING-54	378	103935	1.4	10.481	0.6	3.3623	4	0.2556	4	0.99	1467.2	52.5	1495.7	31.7	1536.2	12	1536.2	12	95.5
TUTING-55	430	67616	1.1	17.4873	1.9	0.3919	2.5	0.0497	1.6	0.65	312.7	4.8	335.8	7	498.6	41.3	312.7	4.8	NA
TUTING-56	226	57207	1	14.7568	1.3	1.1936	10.2	0.1277	10.1	0.99	775	73.9	797.6	56.5	861.4	27.5	775	73.9	90
TUTING-57	171	21596	1.4	13.3442	1.4	1.6526	2.8	0.1599	2.5	0.87	956.5	22	990.6	18	1066.9	28.1	1066.9	28.1	89.7
TUTING-58	336	28444	2.2	9.5889	0.3	3.6513	3.3	0.2539	3.3	1	1458.7	43.2	1560.8	26.5	1701.8	5.4	1701.8	5.4	85.7
TUTING-59	611	283733	1.9	19.3706	1.3	0.3104	4.2	0.0436	4	0.95	275.2	10.8	274.5	10.1	268.8	29.1	275.2	10.8	NA
TUTING-60	493	209688	8.6	13.9509	0.7	1.2121	4.4	0.1226	4.3	0.99	745.7	30.2	806.1	24.2	976.9	14.5	745.7	30.2	76.3

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios							error corr.	Apparent ages (Ma)						Best (Ma)	age ± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±	206Pb*		±	207Pb*	±	206Pb*	±				
				207Pb*	(%)	235U*	(%)	238U	(%)	238U*		(Ma)	235U	(Ma)	207Pb*	(Ma)				
TUTING-61	54	15463	1.1	17.7668	5.6	0.6285	6.5	0.081	3.3	0.51	502	16.1	495.2	25.4	463.6	123.5	502	16.1	108.3	
TUTING-62	1756	5631	3.2	20.4605	4.3	0.0621	4.8	0.0092	2	0.43	59.1	1.2	61.2	2.8	141.8	101.6	59.1	1.2	NA	
TUTING-63	174.7	250019	1.165	10.3407	1.28	3.089	5.69	0.2317	5.6	0.97	1343.3	67.3	1430	43.7	1561.5	24.1	1561.5	24.1	86	
TUTING-64	198	11117	1.6	22.6677	6.4	0.0671	6.9	0.011	2.5	0.37	70.8	1.8	66	4.4	-104.2	156.8	70.8	1.8	NA	
TUTING-65	495	43221	1.4	20.6388	3.8	0.1203	4.1	0.018	1.4	0.34	115	1.6	115.3	4.5	121.4	90.6	115	1.6	NA	
TUTING-66	422	12908	1.4	22.9548	10.2	0.0225	10.6	0.0037	2.9	0.27	24.1	0.7	22.6	2.4	-135.3	253.6	24.1	0.7	NA	
TUTING-68	419	118383	1.1	17.4335	1.4	0.4831	7.6	0.0611	7.4	0.98	382.2	27.6	400.2	25.1	505.4	31.8	382.2	27.6	NA	
TUTING-69	106	10241	0.6	17.7234	3.8	0.5755	4.1	0.074	1.6	0.38	460.1	7	461.6	15.4	469	85.1	460.1	7	98.1	
TUTING-70	84	85787	1.7	15.0167	2.5	1.1203	3	0.122	1.7	0.55	742.2	11.6	763.1	16.1	825	52.3	742.2	11.6	90	

New U-Pb age data for flood deposits at locations 6,7,9,10,11; and downstream samples from locations 3,5,6,7,8. Other U-Pb data used in modeling analysis are previously published by Amidon et al., 2005; Stewart et al., 2008; Zhang et al., 2012.

TABLE DR2. SAMPLE LOCATION AND NEW PETROGRAPHIC DATA

Downstream sample (# corresponds with Fig. 1B)	Latitude (N)	Longitude (E)	Elev. (m)	Quartz (%)	Feldspar (%)	Lithic (%)
Namche Barwa Cirque at #5	29.606417	94.936867	2884	64	29	7
Yigong river at #3	30.096700	95.064700	2154	39	35	26
Downstream sample at #6	29.048474	94.910787	449	66	22	12
Downstream sample at #7	28.996279	94.903436	425	-	-	-
Downstream sample at #8	28.576655	95.070195	264	66	15	19
2000 flood at #6	29.048683	94.910801	475	58	41	2
2000 flood at #7	28.960825	94.865067	466	56	38	6
2000 flood at #10	28.235035	94.996516	230	55	38	8
2000 flood at #11	28.173515	95.030536	199	61	35	4
Megaflow at #6	29.051366	94.906178	502	56	38	6
Megaflow at #7	28.965522	94.847082	553	55	41	5
Megaflow at #9	28.317589	94.953280	353	50	34	15
Megaflow at #10	28.233917	94.983443	270	56	35	9

Sample location data for all new samples (U-Pb and petrographic data) as well as new quartz, feldspar, lithics (QFL) petrographic data for flood deposits and select modern sediment samples. Other QFL data used in Figure 2 are from Garzanti et al., 2004; Zhang et al., 2012.