

APPENDIX C

Detrital Zircon Fission Track Grain Characteristics

1. 05-01
2. 05-03
3. 05-04
4. 05-06
5. 05-07
6. 05-08
7. 05-10
8. 05-11
9. 05-12
10. 05-13
11. 05-16
12. 05-17
13. KA 1
14. KL 2
15. DK 3

05-01 - Kuthlieth Formation - Donald Ridge

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
8		40	16.5	16.5	euhedral	colorless	yes	no	no	no	
14		59	20.3	20.3	euhedral	honey	yes	on top	no	no	long
48		54	22.7	22.7	euhedral	honey	yes	no	no	no	
37		35	23.2	23.2	broken tip-euhedral	slightly honey	yes	no	yes	no	
26		4	23.5	23.5	euhedral	colorless	yes	no	no	no	
17		63	23.6	23.6	half grain-euhedral	honey	yes	on top	no	no	
15		60	24.5	24.5	euhedral	dark honey	yes	on top	no	no	
6		24	24.7	24.7	semi-round	honey	yes	yes	no	no	
11		50	26.0	26.0	round	slightly honey	yes	no	no	no	
28		8	26.2	26.2	euhedral	colorless	yes	no	no	no	
23		78	26.6	26.6	euhedral	honey	yes	no	no	no	
44		48	27.7	27.7	euhedral	slightly honey	yes	no	no	no	
10		48	28.5	28.5	euhedral	slightly honey	yes	yes	no	no	
40		42	28.7	28.7	round	colorless	yes	no	no	no	
3		14	30.0	30.0	semi-round	honey	yes	no	yes	no	
43		46	30.5	30.5	euhedral	slightly honey	yes	no	no	no	
36		33	31.2	31.2	euhedral	honey	yes	on top	no	no	small
33		23	32.6	32.6	euhedral	colorless	no	no	no	no	long, needlelike
24		81	32.6	32.6	euhedral	dark honey	yes	no	no	no	
34		24	33.1	33.1	euhedral	dark honey	yes	yes	yes	no	
16		62	33.7	33.7	euhedral	slightly honey	yes	no	no	no	long
50		58	33.7	33.7	round	honey	no	on top	no	no	
27		7	34.0	34.0	euhedral	colorless	yes	no	yes	no	
9		47	34.6	34.6	broken tip-euhedral	colorless	yes	on edges	no	no	
32		21	35.3	35.3	euhedral	honey	no	on tips	no	no	
25		82	35.8	35.8	euhedral	honey	yes	no	no	no	
42		44	35.9	35.9	round	colorless	yes	no	no	no	
30		11	36.0	36.0	euhedral	honey	yes	on top	yes	no	small
38		36	36.1	36.1	broken tip-semi-round	honey	yes	no	no	no	
18		66	36.4	36.4	semi-round	honey	yes	no	no	no	
31		12	38.0	38.0	semi-round	honey	yes	on left	no	no	
5		18	39.5	39.5	round	slightly honey	yes	no	no	no	
47		53	39.9	39.9	round	honey	yes	no	yes	no	
49		57	41.8	41.8	euhedral	colorless	yes	no	yes	no	
7		27	42.0	42.0	euhedral	honey	no	no	no	no	
12		54	42.0	42.0	semi-round	honey	yes	no	no	no	
35		26	43.5	43.5	euhedral	colorless	yes	no	no	no	
22		77	44.1	44.1	euhedral	colorless	yes	no	yes	no	long
1		8	44.2	44.2	euhedral	honey	yes	no	no	no	
2		11	46.3	46.3	broken tip-euhedral	honey	yes	on right	no	no	
4		16	48.5	48.5	round	honey	yes	on tips	no	no	
21		71	54.4	54.4	euhedral	colorless	yes	no	yes	no	long
29		10	57.4	57.4	semi-round	honey	yes	no	no	no	
41		43	60.9	60.9	broken tip-euhedral	honey	yes	on left	no	no	
39		40	65.0	65.0	broken tip-euhedral	colorless	yes	no	no	no	
13		55	66.6	66.6	round	honey	yes	no	no	no	
19		69	72.0	72.0	euhedral	colorless	yes	no	no	no	long
45		50	74.1	74.1	broken piece	honey	yes	no	no	no	
20		70	75.2	75.2	euhedral	honey	no	no	yes	no	
46		52	79.7	79.7	semi-round	honey	yes	on outside	no	no	

05-03 - Kuitlieth Formation - North of Donald Ridge										
Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
8	64	19.1	19.1	19.1 semi-round	colorless	yes	on top	no	no	small
17	99	21.4	21.4	20.7 euhedral	colorless	yes	no	yes	no	long, dark
20	106	23.5	23.5	21.2 semi-round	honey	yes	no	yes	no	long
48	75	23.9	23.9	21.9 round	colorless	yes	no	no	no	small
37	35	24.2	24.2	22.5 semi-round	colorless	yes	no	yes	no	
19	104	24.5	24.5	23.0 euhedral	colorless	yes	on bottom	no	no	
7	59	25.5	25.5	23.4 euhedral	colorless	yes	no	no	no	
33	18	26.9	26.9	23.7 round	honey	yes	no	no	no	
44	61	27.7	27.7	24.1 euhedral	colorless	yes	no	no	no	long
5	52	27.8	27.8	24.4 euhedral	honey	yes	on outside	no	no	
43	60	28.6	28.6	24.7 euhedral	colorless	yes	no	no	no	
32	17	28.9	28.9	25.1 euhedral	colorless	yes	no	no	no	
29	8	31.1	31.1	25.6 euhedral	colorless	yes	no	no	no	
12	84	31.7	31.7	25.8 round	colorless	yes	no	yes	no	dark
9	68	32.0	32.0	25.9 round	colorless	yes	no	yes	no	small
6	53	32.5	32.5	26.4 broken tip-euhedral	colorless	yes	no	no	no	
10	72	32.8	32.8	26.6 euhedral	colorless	no	no	no	no	
24	124	34.4	34.4	27.0 euhedral	honey	yes	no	no	no	
47	67	35.9	35.9	27.3 broken half-euhedral	honey	yes	no	no	no	
49	76	36.1	36.1	27.8 semi-round	colorless	yes	on outside	no	no	
34	25	36.1	36.1	28.1 euhedral	colorless	no	no	no	no	
26	1	37.0	37.0	28.3 broken piece	colorless	yes	no	no	no	
23	121	38.3	38.3	28.7 euhedral	colorless	yes	on outside	no	no	
21	113	39.8	39.8	28.9 round	honey	yes	no	no	no	long
13	86	39.9	39.9	29.3 euhedral	slightly honey	yes	no	no	no	
22	120	40.0	40.0	29.5 broken tip-euhedral	honey	no	on outside	no	no	
45	63	40.3	40.3	29.9 broken tip-euhedral	colorless	no	no	yes	no	
28	7	41.4	41.4	30.2 euhedral	colorless	yes	no	no	no	
15	92	41.6	41.6	30.7 euhedral	colorless	yes	no	no	no	
16	97	41.6	41.6	31.0 euhedral	honey	no	on outside	no	no	dark
42	55	42.4	42.4	31.3 euhedral	colorless	yes	yes	no	no	
50	78	43.5	43.5	31.7 euhedral	colorless	yes	no	no	no	wide
14	87	43.8	43.8	31.8 euhedral	honey	yes	no	no	no	
30	10	44.7	44.7	32.2 euhedral	colorless	yes	no	no	no	
1	2	45.5	45.5	32.5 euhedral	colorless	yes	no	yes	no	dark
18	103	49.5	49.5	32.7 round	colorless	yes	no	no	no	
36	33	49.6	49.6	33.1 round	colorless	yes	on top	no	no	
4	50	50.8	50.8	33.3 euhedral	honey	yes	no	no	no	small
3	35	51.3	51.3	33.6 broken tip-euhedral	colorless	yes	no	yes	no	
25	125	51.9	51.9	33.8 square	colorless	yes	no	no	no	
11	83	51.9	51.9	34.2 euhedral	honey	yes	no	no	no	
41	54	53.3	53.3	34.6 broken piece-euhedral	colorless	yes	no	no	no	
39	49	56.3	56.3	35.2 euhedral	colorless	yes	no	no	no	
35	26	56.5	56.5	35.4 euhedral	colorless	yes	no	no	no	
46	66	57.8	57.8	35.6 broken tip-euhedral	colorless	no	no	no	no	dark
38	36	59.2	59.2	36.0 euhedral	colorless	yes	no	no	no	
31	15	74.5	74.5	36.4 semi-round	honey	yes	no	no	no	small
40	52	92.4	92.4	37.0 euhedral	colorless	yes	no	no	no	wide
2	3	104.4	104.4	37.5 round	colorless	no	no	no	no	
27	4	109.4	109.4	38.4 broken piece-semi-round	colorless	yes	no	no	no	long

05-04 - Kullthieth Formation - Northern Robinson Mountains

Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
33	14	21.1	21.2	broken tip-euhedral	colorless	yes	no	no	no	
22	93	21.5	21.2	euhedral	colorless	yes	no	no	yes	
17	20	22.3	21.7	euhedral	colorless	yes	no	no	no	
17	79	25.8	22.8	semi-round	colorless	yes	no	no	no	long
47	63	26.1	23.4	round	colorless	yes	on edges	no	no	
25	102	26.3	24.0	semi-round	honey	yes	on outside	no	no	dark
7	57	26.9	24.4	euhedral	colorless	no	on bottom	no	no	small
9	62	27.5	25.0	euhedral	colorless	no	on tips	no	no	small
23	95	27.6	25.1	euhedral	colorless	yes	no	no	no	long, needlelike
4	36	27.9	25.5	euhedral	colorless	yes	no	no	no	long, needlelike
44	58	28.5	25.9	semi-round	colorless	yes	no	no	no	long
36	27	28.8	26.1	euhedral	colorless	no	no	no	yes	
41	52	29.4	26.3	euhedral	colorless	no	no	yes	no	small
45	59	30.8	26.5	euhedral	colorless	yes	no	no	no	small
1	4	30.9	26.9	broken tip-semi-round	colorless	no	no	yes	no	
39	47	32.8	27.3	round	colorless	yes	no	no	no	small
20	87	34.4	27.5	semi-round	honey	no	no	no	no	
38	45	34.6	27.8	semi-round	colorless	yes	yes	no	no	small
12	68	34.6	28.2	semi-round	colorless	no	no	no	no	small
49	74	36.0	28.6	round	colorless	yes	no	no	no	
5	37	36.2	28.9	round	colorless	yes	no	no	no	small
24	97	37.3	29.4	euhedral	colorless	no	on left	no	no	
11	67	37.6	29.6	euhedral	colorless	no	yes	no	no	
30	8	38.1	29.8	semi-round	colorless	no	no	no	no	small, long
21	89	38.6	30.2	round	colorless	yes	on top	no	no	
14	73	38.9	30.5	broken tip-euhedral	colorless	no	no	no	no	
28	6	39.9	30.8	round	colorless	yes	no	no	no	dark
32	11	41.0	31.3	round	colorless	yes	on top	no	no	
31	9	41.0	31.5	semi-round	colorless	no	no	no	no	small
48	68	41.0	31.8	euhedral	colorless	yes	no	no	no	long
34	16	42.0	32.0	semi-round	colorless	yes	on outside	no	no	small
46	62	42.3	32.5	broken tip-semi-round	colorless	yes	no	no	no	
50	78	42.5	32.7	semi-round	colorless	yes	no	no	yes	small
10	64	44.0	32.9	euhedral	colorless	yes	on bottom	no	no	long, dark
6	51	44.0	33.2	euhedral	colorless	yes	no	no	no	long, needlelike
29	7	44.2	33.4	euhedral	colorless	no	on left	no	no	
40	48	44.3	33.7	broken end-euhedral	colorless	yes	no	no	no	
26	1	44.8	33.8	euhedral	colorless	yes	no	no	no	small
13	71	45.9	34.2	euhedral	colorless	yes	no	no	no	
15	75	49.6	34.5	euhedral	colorless	yes	no	no	no	small
3	29	50.3	34.8	round	colorless	no	no	yes	no	
37	37	51.5	35.0	round	colorless	yes	no	no	no	
42	53	53.2	35.3	round	colorless	yes	no	no	no	
18	85	53.6	35.6	euhedral	colorless	yes	no	yes	no	
19	86	58.2	35.9	round	colorless	yes	on left	no	no	
16	77	60.7	36.2	semi-round	colorless	yes	on bottom	no	no	
27	5	61.2	36.4	semi-round	colorless	yes	on outside	no	no	small
8	58	63.8	36.7	semi-round	colorless	yes	on right	no	no	wide
43	57	64.7	37.3	semi-round	colorless	yes	on upper right	no	no	
35	18	70.7	37.8	euhedral	colorless	no	no	no	no	long, dark

05-06 - Poul Creek Formation - Northern Robinson Mountains

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
17		33	13.9	13.9	broken tip-euhedral	colorless	yes	no	no	no	
8		13	21.6	21.6	18.5 euhedral	colorless	yes	no	no	no	long
24		51	22.6	22.6	19.4 euhedral	colorless	yes	no	no	no	small
4		5	23.1	23.1	20.0 euhedral	colorless	yes	no	no	no	
7		12	24.0	24.0	20.8 euhedral	colorless	no	yes	no	no	long, dark
45		120	24.4	24.4	21.3 round	colorless	no	no	no	yes	
43		115	24.6	24.6	21.5 round	colorless	yes	no	no	yes	small
18		36	25.1	25.1	22.0 broken piece	colorless	no	on edges	no	no	
35		97	25.6	25.6	22.2 broken tip-euhedral	colorless	yes	no	no	yes	
48		131	28.0	28.0	22.7 euhedral	colorless	yes	no	no	no	wide
2		3	28.4	28.4	23.1 round	colorless	no	no	no	yes	small
25		53	29.8	29.8	23.5 euhedral	colorless	yes	no	no	no	dark
50		143	30.4	30.4	23.9 euhedral	colorless	yes	no	no	no	small
11		21	31.5	31.5	24.7 broken-semi-round	colorless	yes	yes	no	no	
16		32	31.7	31.7	25.2 euhedral	colorless	yes	no	no	yes	
46		125	31.8	31.8	25.6 semi-round	colorless	yes	on left	no	no	
20		43	31.8	31.8	26.1 euhedral	colorless	yes	on outside	no	no	small
13		23	34.4	34.4	26.6 euhedral	colorless	yes	no	no	no	dark
6		11	34.6	34.6	26.9 broken tip-euhedral	colorless	yes	no	yes	no	
26		66	34.8	34.8	27.1 euhedral	honey	yes	no	yes	yes	
32		93	35.7	35.7	27.4 broken piece-euhedral	colorless	no	on left	yes	no	
3		4	36.0	36.0	27.7 euhedral	colorless	yes	yes	no	no	long
47		128	36.3	36.3	28.3 broken half-euhedral	colorless	no	on left	no	no	
10		16	36.5	36.5	28.7 euhedral	colorless	yes	no	no	no	wide
29		80	37.1	37.1	28.8 euhedral	colorless	no	no	yes	no	dark
31		92	37.3	37.3	29.2 euhedral	colorless	yes	no	no	yes	dark
49		135	38.1	38.1	29.4 semi-round	colorless	yes	no	yes	no	
28		70	38.2	38.2	29.7 euhedral	colorless	yes	on left	no	no	long
23		50	38.3	38.3	30.0 round	colorless	no	on outside	yes	no	
21		45	38.8	38.8	30.4 round	colorless	yes	no	no	no	
27		69	39.2	39.2	30.6 round	colorless	yes	no	no	no	
30		89	39.9	39.9	30.9 euhedral	colorless	yes	no	yes	no	
22		47	40.1	40.1	31.2 round	colorless	no	on left	no	no	dark
14		26	40.8	40.8	31.4 euhedral	colorless	no	no	no	no	large
42		114	40.8	40.8	31.6 euhedral	colorless	yes	on edges	no	no	small
9		14	40.8	40.8	31.8 euhedral	colorless	yes	no	no	no	dark tips
34		95	40.8	40.8	32.0 broken tip-euhedral	colorless	no	no	no	no	small
40		111	42.2	42.2	32.1 euhedral	colorless	yes	no	yes	no	
19		42	42.9	42.9	32.4 euhedral	colorless	yes	no	no	yes	
12		22	44.6	44.6	32.7 euhedral	colorless	no	on outside	no	yes	small, dark
5		7	45.9	45.9	33.0 broken tip-euhedral	colorless	yes	no	no	no	
39		110	46.7	46.7	33.3 broken tip-euhedral	colorless	yes	on outside	no	no	
1		1	49.1	49.1	33.5 broken tip-euhedral	colorless	yes	no	no	no	dark
15		27	51.1	51.1	33.8 euhedral	colorless	no	no	no	no	small
41		113	51.8	51.8	34.1 round	colorless	no	no	no	no	
44		118	52.5	52.5	34.4 euhedral	colorless	yes	on outside	no	no	long
37		104	52.8	52.8	34.8 euhedral	colorless	yes	no	no	no	
33		94	65.7	65.7	35.2 round	colorless	no	no	no	no	
36		99	85.1	85.1	35.6 round	colorless	no	no	yes	no	
38		109	92.1	92.1	36.3 euhedral	colorless	yes	on left	no	no	

05-07 - Poul Creek Formation - Northern Robinson Mountains

Grain #	Stage Grain #		Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
	Grain Age (Ma)	Grain Age (Ma)								
23	116	19.6	19.6	euhedral	colorless	no	no	no	no	
16	57	20.4	20.0	euhedral	colorless	yes	no	no	no	long
41	53	21.5	20.4	euhedral	colorless	yes	no	no	no	small, dark
15	49	24.7	21.0	semi-round	colorless	yes	no	no	no	dark
27	10	26.0	21.6	euhedral	colorless	no	on right	no	no	long
18	69	26.1	22.6	euhedral	colorless	yes	no	no	no	small
29	13	26.7	23.1	euhedral	colorless	yes	no	no	no	
4	9	27.5	23.9	semi-round	colorless	yes	on top	no	no	
9	34	27.7	24.4	euhedral	colorless	yes	no	no	no	small
13	39	27.8	24.5	euhedral	colorless	yes	no	yes	no	
22	87	28.8	24.8	euhedral	honey	yes	no	yes	no	long
31	19	28.9	25.2	broken piece-euhedral	colorless	no	on right	no	no	
26	9	29.5	25.5	euhedral	colorless	yes	yes	no	no	long
24	117	29.7	25.7	euhedral	honey	yes	no	yes	no	wide
8	30	30.0	26.0	euhedral	honey	yes	no	no	no	long
3	8	30.2	26.1	euhedral	colorless	yes	no	no	no	long
48	75	31.0	26.3	euhedral	honey	yes	no	no	no	large
17	58	31.3	26.6	euhedral	colorless	yes	on top	no	no	
36	28	32.6	27.0	euhedral	honey	yes	no	no	no	
34	25	32.6	27.2	round	honey	yes	no	no	no	small
25	143	33.1	27.5	euhedral	honey	yes	no	yes	no	long
47	73	33.6	27.8	euhedral	honey	yes	no	no	no	wide
28	11	36.7	28.2	euhedral	colorless	no	no	no	no	
14	42	36.8	28.5	euhedral	honey	yes	no	no	no	
2	4	37.0	29.0	euhedral	honey	yes	no	no	yes	peanut-shaped, dark
44	62	37.3	29.3	euhedral	honey	yes	no	no	no	
39	42	39.4	29.7	euhedral	slightly honey	yes	no	no	no	long
5	21	39.6	30.0	euhedral	honey	yes	no	no	no	
33	23	41.0	30.5	euhedral	honey	yes	yes	no	no	
21	83	41.5	30.8	euhedral	colorless	no	no	no	no	
43	59	41.6	31.1	broken piece	honey	no	no	no	no	
20	74	42.9	31.6	euhedral	honey	yes	on top	no	no	dark
45	67	44.1	31.9	round	honey	no	no	no	no	long, dark
32	22	44.3	32.0	euhedral	honey	no	no	no	no	small
46	72	44.4	32.2	euhedral	colorless	yes	no	no	no	needlelike
38	34	44.4	32.4	round	honey	no	no	no	no	small
35	26	45.4	32.7	euhedral	honey	yes	no	no	no	
19	71	46.2	33.2	euhedral	honey	no	no	no	no	long
30	15	49.2	33.8	euhedral	colorless	yes	no	no	no	
50	79	50.7	34.0	semi-round	honey	no	no	no	no	small
40	50	52.8	34.5	euhedral	colorless	no	no	yes	no	long
11	36	55.4	35.0	semi-round	honey	yes	no	no	no	
10	35	57.7	35.2	euhedral	honey	yes	no	yes	no	
1	3	59.3	35.6	euhedral	honey	yes	yes	no	no	
49	78	61.0	35.9	euhedral	honey	yes	no	no	no	small
6	24	61.2	36.4	semi-round	honey	yes	no	no	no	long
7	27	70.1	37.0	euhedral	honey	yes	no	no	no	
42	57	72.8	37.1	broken tip-euhedral	honey	yes	no	no	no	dark
37	33	80.2	37.8	euhedral	honey	yes	no	yes	no	dark
12	37	87.2	38.3	round	honey	yes	no	no	yes	

05-08 - Poul Creek Formation - Northern Robinson Mountains

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
43		46	24.5	24.6	euhedral	colorless	yes	on outside	no	no	wide
39		39	25.4	24.9	euhedral	honey	yes	no	no	no	
27		10	25.4	24.9	euhedral	honey	yes	no	no	no	long
11		44	27.4	25.8	round	colorless	yes	no	no	no	dark
47		67	28.3	26.2	euhedral	honey	yes	no	yes	no	
15		55	28.4	26.7	semi-round	honey	yes	no	no	no	
48		71	29.0	26.9	semi-round	honey	yes	no	no	no	
20		69	29.7	27.2	broken piece	honey	yes	no	no	no	
24		98	30.4	27.6	semi-round	colorless	yes	no	no	no	
8		30	31.2	27.9	semi-round	slightly honey	yes	on top	no	yes	
12		45	31.6	28.1	broken piece	colorless	yes	no	yes	no	
33		24	31.7	28.4	euhedral	honey	yes	no	yes	no	
19		65	32.0	28.7	euhedral	honey	yes	no	yes	no	
9		31	32.2	29.1	euhedral	honey	yes	on tips	no	no	
7		18	32.6	29.3	semi-round	slightly honey	yes	on left	no	no	
26		9	32.6	29.6	broken tip-semi-round	honey	yes	no	no	no	
6		14	33.0	29.9	semi-round	colorless	yes	on tips	yes	no	
30		22	33.8	30.0	euhedral	colorless	yes	no	no	no	long
46		62	33.9	30.2	semi-round	honey	yes	no	no	no	
2		4	34.1	30.4	euhedral	honey	yes	on tips	yes	no	
37		34	34.6	30.6	euhedral	honey	yes	on tips	yes	no	wide
40		41	35.0	30.8	euhedral	honey	yes	on left	no	no	wide
36		30	35.1	31.0	semi-round	colorless	yes	no	no	no	
1		1	36.7	31.4	euhedral	honey	yes	on top	yes	no	
32		24	37.1	31.5	euhedral	honey	yes	no	yes	no	
45		57	38.2	31.8	round	honey	yes	no	no	no	dark
21		82	38.4	32.0	broken tip-euhedral	colorless	yes	no	no	no	dark
25		99	38.7	32.2	euhedral	honey	yes	no	no	no	
22		84	38.7	32.3	broken piece-euhedral	colorless	yes	no	yes	no	
28		13	38.8	32.5	broken piece-euhedral	honey	yes	no	no	no	dark
34		27	39.7	32.6	semi-round	honey	yes	no	no	no	
49		74	40.6	32.7	euhedral	slightly honey	yes	no	no	no	
35		28	40.9	32.9	euhedral	slightly honey	yes	on top	no	no	
3		6	41.0	33.3	euhedral	honey	yes	no	no	no	
38		38	41.4	33.5	round	honey	yes	on left	no	no	dark
41		42	41.7	33.6	semi-round	honey	yes	on tips	no	no	
42		45	42.2	33.8	euhedral	colorless	yes	no	no	no	long, needlelike
31		23	44.8	34.0	broken piece-euhedral	colorless	yes	on left	no	no	left
50		76	45.0	34.4	broken tip-euhedral	honey	no	no	yes	no	
4		7	46.0	34.7	euhedral	honey	yes	no	no	no	long
14		47	46.6	34.9	euhedral	slightly honey	yes	yes	no	no	
10		35	48.2	35.2	euhedral	slightly honey	yes	no	no	no	long
29		17	48.6	35.5	broken tip-euhedral	honey	yes	no	yes	no	
13		47	51.4	35.8	euhedral	slightly honey	yes	yes	no	no	
23		93	53.9	36.3	euhedral	honey	yes	no	no	no	long
18		64	54.0	36.7	semi-round	honey	yes	on top	no	no	
5		12	54.3	36.9	euhedral	dark honey	yes	on tip	no	no	
44		53	58.1	37.2	euhedral	colorless	yes	on top	yes	no	
16		61	69.8	37.7	euhedral	colorless	yes	no	no	no	
17		62	81.1	38.3	broken piece	honey	yes	no	no	no	

05-09 - Yakataga Formation - Kulthieth Mountain

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
45	128	6.0	6.0	euohedral	6.0 euohedral	slightly honey	yes	no	yes	no	
20	43	10.0	10.0	semi-round	7.9 semi-round	honey	yes	no	no	no	
7	10	11.9	11.9	semi-round	9.1 semi-round	honey	yes	no	no	no	small
47	136	13.1	13.1	broken piece	10.4 broken piece-euohedral	slightly honey	yes	no	no	no	
22	48	13.5	13.5	euohedral	11.0 euohedral	honey	yes	no	no	no	
46	134	14.5	14.5	square	11.7 square	colorless	yes	yes	no	no	
5	7	15.2	15.2	euohedral	12.6 euohedral	honey	yes	no	no	no	
24	58	15.2	15.2	round	12.8 round	honey	yes	no	no	no	
27	62	15.6	15.6	euohedral	13.2 euohedral	colorless	yes	no	no	no	
21	44	17.7	17.7	broken piece	13.7 broken piece	honey	yes	no	yes	no	
29	66	19.0	19.0	semi-round	14.2 semi-round	honey	yes	no	no	no	
35	74	19.3	19.3	euohedral	14.8 euohedral	honey	yes	no	no	no	
9	17	20.0	20.0	euohedral	15.3 euohedral	honey	yes	no	no	no	
11	22	20.1	20.1	broken tip	15.6 broken tip-euohedral	honey	yes	yes	no	no	
17	30	20.6	20.6	euohedral	15.9 euohedral	honey	no	no	no	no	
25	59	21.2	21.2	semi-round	16.0 semi-round	honey	no	no	no	no	
23	56	22.4	22.4	semi-round	16.3 semi-round	honey	yes	no	no	no	
37	82	22.6	22.6	broken end	16.5 broken end	honey	yes	on outside	no	no	
28	65	22.8	22.8	euohedral	16.8 euohedral	honey	yes	no	no	no	
32	69	23.3	23.3	euohedral	17.0 euohedral	colorless	yes	no	no	no	
41	96	24.9	24.9	euohedral	17.2 euohedral	slightly honey	yes	yes	no	no	needlelike
43	116	25.2	25.2	semi-round	17.3 semi-round	honey	yes	no	no	no	
15	28	25.9	25.9	euohedral	17.8 euohedral	honey	yes	on bottom left	no	no	
8	15	28.5	28.5	semi-round	18.0 semi-round	slightly honey	yes	on right	no	no	
19	39	29.8	29.8	euohedral	18.6 euohedral	honey	yes	no	no	no	
1	1	32.3	32.3	euohedral	19.0 euohedral	colorless	yes	no	no	no	
14	26	33.3	33.3	euohedral	19.4 euohedral	honey	yes	no	no	no	long
44	124	37.8	37.8	euohedral	19.6 euohedral	honey	yes	no	yes	yes	
42	108	38.1	38.1	semi-round	20.1 semi-round	honey	yes	no	no	no	
49	140	38.1	38.1	euohedral	20.2 euohedral	honey	yes	no	no	no	
36	81	38.2	38.2	euohedral	20.5 euohedral	honey	yes	no	no	no	
12	24	39.4	39.4	semi-round	20.9 semi-round	slightly honey	yes	on tips	no	no	
3	3	40.1	40.1	euohedral	21.4 euohedral	honey	yes	no	no	no	
40	92	44.3	44.3	broken tip	21.6 broken tip	slightly honey	yes	no	no	no	long
48	139	45.1	45.1	euohedral	21.7 euohedral	honey	yes	no	no	no	
38	84	45.4	45.4	euohedral	21.9 euohedral	honey	yes	no	no	no	
30	67	53.1	53.1	broken piece	22.3 broken piece	honey	yes	no	no	no	dark
34	72	55.2	55.2	euohedral	22.7 euohedral	slightly honey	yes	no	no	no	long
33	70	55.6	55.6	euohedral	23.1 euohedral	colorless	yes	no	no	no	small
18	37	55.6	55.6	semi-round	23.6 semi-round	honey	yes	no	no	no	
10	20	57.7	57.7	round	24.0 round	slightly honey	yes	no	no	yes	
6	8	58.2	58.2	semi-round	24.5 semi-round	slightly honey	yes	no	no	no	
39	91	62.3	62.3	euohedral	24.8 euohedral	honey	yes	yes	no	no	
50	141	66.5	66.5	broken tip	25.1 broken tip-semi-round	slightly honey	yes	no	no	no	
4	6	71.0	71.0	semi-round	25.8 semi-round	honey	yes	no	no	no	
16	29	73.4	73.4	broken tip	26.3 broken tip	honey	yes	on edges	no	no	
13	25	82.4	82.4	euohedral	27.1 euohedral	colorless	yes	no	no	no	
26	60	84.6	84.6	euohedral	26.6 euohedral	honey	yes	no	yes	no	long
2	2	98.5	98.5	euohedral	28.4 euohedral	honey	yes	no	no	no	
31	68	114.8	114.8	euohedral	28.9 euohedral	colorless	yes	no	yes	no	long

05-10 -Yakataga Formation - Kuthlieth Mountain

Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
23	86	8.2	8.2	euhedral	honey	yes	no	yes	no	long
18	68	9.5	9.1	euhedral	honey	yes	no	no	no	long
6	15	11.4	9.6	euhedral	honey	yes	no	no	no	
27	6	12.5	10.2	euhedral	colorless	yes	no	no	no	
37	20	12.9	10.6	euhedral	colorless	yes	no	no	yes	
33	12	13.9	10.9	semi-round	colorless	yes	no	yes	no	dark
38	22	14.5	11.4	euhedral	honey	yes	no	no	no	
40	32	14.6	11.9	euhedral	honey	yes	no	yes	no	
2	7	15.7	12.3	broken piece-euhedral	colorless	yes	no	no	no	
10	34	16.2	12.7	semi-round	slightly honey	yes	no	no	no	
48	55	17.3	13.0	euhedral	slightly honey	yes	no	no	no	
43	39	17.5	13.2	semi-round	slightly honey	yes	no	no	no	long
41	37	17.6	13.7	euhedral	honey	yes	no	yes	no	
19	74	17.6	13.8	round	honey	yes	no	no	no	
34	13	18.1	14.0	broken tip	colorless	no	no	no	no	
9	25	19.4	14.3	broken tip-euhedral	slightly honey	yes	no	no	no	
45	44	20.3	14.5	euhedral	honey	no	no	no	no	
5	14	20.4	14.8	broken piece-euhedral	colorless	yes	no	no	no	
3	8	20.6	15.0	euhedral	colorless	yes	no	no	no	
24	87	21.5	15.3	euhedral	honey	yes	no	no	no	
26	5	21.7	15.6	semi-round	honey	yes	no	no	no	
8	24	22.4	15.8	euhedral	slightly honey	yes	no	no	no	long
30	9	22.6	16.0	round	honey	yes	on outside	no	no	
25	92	26.0	16.4	euhedral	colorless	yes	no	yes	no	long
4	10	26.3	16.6	broken tip-euhedral	slightly honey	yes	on top	no	no	
44	42	27.6	16.8	broken tip-round	slightly honey	yes	no	no	no	
32	11	28.7	17.3	broken tip	honey	yes	no	no	no	
28	7	29.5	17.7	euhedral	honey	on right	no	no	no	
20	80	30.3	18.0	semi-round	honey	yes	no	no	no	
12	36	30.8	18.5	round	honey	yes	no	no	no	
15	54	31.2	18.7	broken tip-euhedral	slightly honey	yes	no	no	no	
31	10	31.4	18.9	semi-round	honey	yes	on outside	yes	no	dark
39	30	32.5	19.3	euhedral	honey	yes	no	no	no	
13	39	38.2	19.4	euhedral	colorless	yes	no	no	no	
29	8	38.7	19.7	euhedral	slightly honey	yes	no	no	no	
14	41	39.7	20.2	broken piece	slightly honey	yes	no	no	no	
36	19	39.7	20.3	broken piece-semi-round	honey	yes	no	yes	no	
16	65	39.7	20.6	semi-round	honey	yes	no	no	no	
46	53	42.2	21.2	euhedral	honey	yes	on outside	no	no	
17	67	42.9	21.4	euhedral	slightly honey	yes	no	yes	no	long
7	19	43.3	21.9	euhedral	slightly honey	yes	no	no	no	dark
35	16	49.3	22.3	euhedral	colorless	yes	no	no	no	
21	82	68.9	22.8	semi-round	honey	yes	no	no	no	
1	5	69.4	23.5	broken piece	honey	yes	no	no	no	
22	83	70.0	24.0	round	honey	yes	yes	no	no	
50	61	73.9	24.5	round	honey	yes	no	no	no	
47	54	76.3	25.0	round	colorless	yes	no	no	no	
42	38	76.7	25.5	round	honey	no	no	yes	no	
11	35	81.4	26.0	broken piece-euhedral	slightly honey	yes	no	no	no	
49	57	91.6	26.3	semi-round	honey	yes	no	no	no	

05-11 - Yakataga Formation - Kulthieth Mountain

Grain #	Stage	Grain #	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
29	17	4.2	4.1	broken tip-euhedral	colorless	yes	no	no	yes	
25	69	9.8	6.8	semi-round	slightly honey	yes	no	no	no	
44	67	10.1	7.8	euhedral	honey	yes	on outside	no	no	
9	36	13.1	8.9	euhedral	slightly honey	yes	no	no	no	
14	44	13.5	10.0	euhedral	colorless	yes	yes	no	no	
12	42	14.7	10.5	semi-round	colorless	yes	no	yes	no	
13	43	15.2	11.4	euhedral	slightly honey	yes	on top	yes	no	
46	70	15.4	12.0	semi-round	honey	no	no	no	no	dark
31	22	15.9	12.4	euhedral	honey	yes	no	no	no	
42	59	16.0	12.9	euhedral	honey	yes	no	no	no	
4	14	16.6	13.2	semi-round	colorless	yes	no	no	no	teardrop shape
38	42	16.8	13.6	euhedral	honey	yes	no	no	no	
8	34	16.9	13.8	euhedral	slightly honey	yes	no	no	no	
32	27	17.0	14.1	euhedral	colorless	yes	no	no	no	
48	74	17.0	14.2	euhedral	honey	yes	no	no	no	long, needlelike
18	53	17.7	14.4	euhedral	slightly honey	yes	no	no	no	
10	38	19.5	14.6	euhedral	colorless	yes	no	no	yes	
20	59	20.2	14.9	broken piece-euhedral	honey	yes	no	no	no	
45	69	20.6	15.1	semi-round	honey	yes	no	no	no	
2	12	22.2	15.3	round	slightly honey	no	no	no	no	
1	4	23.5	15.6	broken tip-euhedral	colorless	yes	no	no	no	
47	72	23.6	15.7	euhedral	honey	yes	no	no	no	
35	33	23.8	16.2	semi-round	honey	yes	no	no	no	
15	46	24.6	16.5	euhedral	slightly honey	yes	no	no	no	
11	41	25.4	16.8	semi-round	honey	yes	on outside	no	no	
17	52	25.6	16.9	round	honey	yes	no	no	no	
33	30	25.7	17.3	euhedral	colorless	yes	no	no	no	
41	58	26.4	17.6	semi-round	honey	yes	yes	no	no	
23	63	27.5	18.0	euhedral	honey	yes	no	no	no	
50	82	27.8	18.2	semi-round	honey	yes	no	no	no	
28	8	27.9	18.3	euhedral	colorless	yes	no	no	no	
21	60	28.6	18.5	semi-round	slightly honey	yes	no	no	no	
6	20	30.3	18.7	euhedral	colorless	yes	no	yes	no	
7	27	30.8	18.9	semi-round	honey	yes	no	no	no	
3	13	34.9	19.4	euhedral	slightly honey	yes	no	no	no	long
19	54	35.0	19.7	euhedral	honey	no	on outside	no	no	
34	31	35.8	20.1	euhedral	honey	yes	no	no	no	
22	61	35.9	20.5	euhedral	honey	yes	no	no	no	
43	60	37.0	20.8	semi-round	honey	no	on bottom left	no	no	
27	4	39.3	21.1	broken tip-euhedral	colorless	yes	no	no	no	
36	36	41.9	21.3	round	slightly honey	yes	no	no	no	
49	76	42.0	21.6	euhedral	honey	yes	no	no	no	
26	2	46.8	21.8	euhedral	colorless	yes	no	yes	no	
24	64	51.4	22.2	broken tip-euhedral	slightly honey	yes	no	no	no	
37	40	52.7	22.4	broken tip-euhedral	colorless	yes	no	no	no	
39	51	68.3	22.7	broken piece	honey	yes	no	no	no	
40	57	69.6	23.4	euhedral	honey	yes	on right	no	no	
16	50	83.0	24.0	euhedral	honey	yes	no	no	no	
30	18	83.5	24.6	round	slightly honey	no	no	no	no	
5	15	115.1	25.1	round	slightly honey	yes	no	no	no	

05-12 - Yakataga Formation - Kuitlieth Mountain

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
13		29	12.3	12.3	12.3 euhedral	honey	yes	no	no	no	
26		4	16.2	16.2	14.5 euhedral	honey	yes	no	no	no	long
15		38	16.3	15.2	broken tip-euhedral	honey	yes	no	no	no	
14		33	16.4	15.5	broken tip-euhedral	honey	yes	no	no	no	
3		5	16.7	15.7	broken piece	honey	yes	no	no	no	
7		9	16.7	15.8	euhedral	slightly honey	yes	no	no	no	long
11		25	19.6	16.5	euhedral	honey	yes	no	yes	no	
6		8	19.9	16.9	euhedral	honey	no	no	no	no	long
31		15	20.7	17.7	euhedral	honey	yes	no	no	no	
23		55	20.9	17.8	broken tip-euhedral	colorless	yes	no	no	no	
9		14	20.9	17.9	round	honey	yes	no	no	no	
46		64	21.1	18.1	euhedral	slightly honey	yes	no	no	no	
5		7	23.3	18.5	semi-round	slightly honey	yes	on tip	no	no	
10		21	23.9	19.1	euhedral	honey	yes	on outside	no	no	
44		60	24.2	19.4	euhedral	slightly honey	no	no	no	no	
29		11	24.7	19.7	semi-round	honey	yes	no	no	no	
43		54	24.9	20.0	euhedral	honey	yes	no	no	no	
27		7	25.1	20.5	euhedral	honey	yes	on edges	no	no	long
41		45	26.1	20.8	euhedral	honey	yes	no	no	no	
24		59	28.1	21.1	round	honey	yes	no	no	no	
25		61	28.9	21.5	euhedral	honey	yes	no	no	no	long
34		27	28.9	21.7	euhedral	honey	yes	no	yes	no	
28		10	29.4	22.0	euhedral	colorless	yes	on right	no	no	
50		73	29.6	22.3	euhedral	slightly honey	yes	no	no	no	
17		41	30.2	22.6	broken piece	slightly honey	yes	no	no	no	
38		39	30.4	22.8	euhedral	honey	yes	no	no	no	
16		39	30.7	23.0	euhedral	honey	yes	no	no	no	
12		26	31.0	23.2	euhedral	slightly honey	yes	no	yes	no	
1		3	31.8	23.5	euhedral	colorless	yes	no	yes	no	
18		44	32.2	23.7	broken piece-semi-round	honey	yes	no	no	no	
21		53	32.5	24.0	semi-round	honey	yes	no	no	no	
22		54	34.5	24.3	round	honey	yes	on top	no	no	
8		13	34.7	24.5	euhedral	slightly honey	yes	no	no	no	
36		30	35.1	24.7	euhedral	slightly honey	yes	no	no	no	
2		4	36.6	24.9	broken tip-euhedral	colorless	yes	no	no	no	
33		26	38.0	25.1	euhedral	honey	yes	on tip	no	no	
37		36	38.8	25.2	euhedral	slightly honey	yes	no	no	no	
49		69	40.2	25.8	euhedral	honey	yes	no	no	no	
20		51	41.4	26.0	euhedral	colorless	yes	no	yes	no	long, needlelike
47		65	44.2	26.4	euhedral	slightly honey	no	no	no	no	
4		6	45.2	26.6	euhedral	colorless	yes	yes	no	no	
30		13	46.4	27.1	broken piece	honey	yes	no	no	no	on edges
35		28	51.2	27.5	euhedral	slightly honey	yes	no	no	no	
32		16	51.3	27.8	round	honey	yes	no	no	no	
39		43	56.8	28.1	semi-round	honey	yes	no	no	no	
48		68	67.7	28.8	euhedral	honey	no	no	no	no	long, needlelike
45		62	74.4	29.4	semi-round	colorless	yes	no	no	no	
40		44	87.5	30.2	euhedral	slightly honey	no	on outside	no	no	long, needlelike
19		50	89.1	30.4	broken tip-euhedral	colorless	yes	no	no	no	
42		48	115.1	30.9	semi-round	slightly honey	yes	no	no	no	

05-13 - Poul Creek Formation - Grindle Hills

Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
16	54	17.6	17.6	17.6 round	honey	yes	no	no	no	
2	11	19.0	18.4	round	honey	yes	no	no	no	small
25	78	19.6	18.7	euhebral	honey	yes	no	no	no	
19	68	20.3	19.1	euhebral	honey	yes	no	no	no	
10	32	20.4	19.3	semi-round	slightly honey	yes	on tips	no	no	
49	147	21.3	19.6	round	honey	no	on bottom	no	no	
14	43	22.5	20.0	euhebral	slightly honey	yes	no	no	no	needlelike
35	100	22.6	20.1	round	honey	yes	no	no	no	
5	20	23.0	20.4	broken piece	honey	no	no	no	no	
21	74	24.3	20.9	broken tip	honey	no	no	no	no	
33	91	24.9	21.3	euhebral	slightly honey	no	no	no	no	
8	29	25.1	21.7	round	honey	yes	on left	no	no	
39	109	25.3	21.8	euhebral	honey	yes	no	no	no	
40	111	25.7	22.0	euhebral	honey	yes	no	no	no	
26	79	26.9	22.4	euhebral	honey	yes	upper left	no	no	
23	76	28.0	22.6	broken-euhebral	slightly honey	yes	no	no	no	
47	136	28.9	22.8	euhebral	slightly honey	yes	no	no	no	
50	158	29.2	23.2	euhebral	colorless	yes	no	no	no	
27	80	30.4	23.7	euhebral	slightly honey	no	no	no	no	
41	113	31.3	24.1	euhebral	honey	yes	no	no	no	
4	15	32.5	24.4	euhebral	slightly honey	no	no	no	yes	
13	37	32.9	24.8	round	slightly honey	yes	no	no	no	
34	96	32.9	25.1	semi-round	slightly honey	yes	no	no	no	long, needlelike
37	105	33.3	25.4	broken piece	colorless	yes	no	no	no	
31	88	33.5	25.7	semi-round	honey	yes	no	no	no	
11	34	33.6	26.0	broken tip	honey	yes	on tip	no	no	
45	133	34.3	26.3	round	honey	yes	no	no	no	
18	66	35.3	26.5	round	slightly honey	yes	no	no	no	
17	60	35.9	26.8	round	slightly honey	yes	no	no	no	
36	101	36.0	27.2	euhebral	honey	yes	no	no	no	
30	87	36.5	27.4	semi-round	slightly honey	yes	no	no	no	
24	77	38.4	27.7	euhebral	colorless	yes	no	no	no	
32	89	38.4	28.0	semi-round	slightly honey	yes	on top	no	no	
20	72	39.7	28.2	round	slightly honey	no	yes	yes	yes	
29	85	40.0	28.5	semi-round	slightly honey	yes	no	no	no	
15	48	40.9	28.8	semi-round	slightly honey	yes	no	yes	no	
3	12	42.4	29.1	round	honey	yes	on tip	no	no	small, dark
7	22	44.5	29.3	euhebral	slightly honey	no	no	no	yes	
9	30	45.6	29.6	euhebral	colorless	no	no	no	no	
22	75	46.2	29.9	euhebral	colorless	yes	no	no	no	
6	21	47.0	30.1	euhebral	slightly honey	yes	no	no	no	
12	36	47.9	30.3	euhebral	honey	yes	no	no	no	
38	108	49.9	30.6	euhebral	honey	yes	no	no	no	
48	141	52.5	30.9	round	colorless	yes	no	no	no	
43	117	56.6	31.1	semi-round	honey	no	no	no	no	
28	82	58.2	31.4	round	slightly honey	yes	no	no	no	small
1	9	63.6	31.6	euhebral	honey	yes	no	no	no	small
42	116	63.6	31.9	semi-round	honey	yes	no	no	no	
44	118	68.5	32.1	round	honey	yes	no	no	no	
46	134	74.0	32.4	round	slightly honey	yes	no	no	no	

05-16 - Poul Creek Formation - Grindle Hills

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
45	81	22.2	22.3	euhedral	honey	yes	on left	no	no	no	
14	35	22.8	22.4	euhedral	honey	yes	on top	no	no	no	needlelike
28	3	22.9	22.5	euhedral	colorless	yes	no	yes	no	no	
41	58	23.8	22.9	euhedral	slightly honey	yes	no	no	no	no	
25	68	25.0	23.3	semi-round	honey	yes	no	no	no	no	
32	15	26.2	23.7	euhedral	honey	yes	yes	no	no	no	
15	37	26.6	23.9	semi-round	honey	yes	no	no	yes	yes	
35	24	27.0	24.3	euhedral	honey	no	on edges	yes	no	no	long, needlelike
27	2	28.3	24.9	euhedral	colorless	yes	no	no	no	no	
8	17	28.5	25.4	semi-round	honey	yes	no	no	no	no	
44	77	29.7	25.7	euhedral	slightly honey	yes	no	no	no	no	long, needlelike
48	93	29.9	25.9	semi-round	colorless	yes	no	no	no	no	long
6	11	30.4	26.2	round	honey	yes	no	yes	no	no	
38	32	32.4	26.5	euhedral	slightly honey	yes	no	no	no	no	long
10	24	33.2	26.8	euhedral	honey	no	no	no	no	no	
24	65	33.4	27.3	semi-round	slightly honey	yes	no	yes	no	no	
22	60	33.6	27.5	broken tip-euhedral	slightly honey	yes	no	no	no	no	
42	60	35.0	27.9	round	honey	yes	no	no	no	no	
49	103	35.9	28.2	euhedral	colorless	yes	yes	no	no	no	small
26	1	36.2	28.6	euhedral	slightly honey	yes	on tips	no	no	no	
20	52	36.6	29.0	round	honey	yes	no	no	no	no	dark
7	12	36.6	29.4	broken tip-semi-round	honey	yes	no	no	no	no	
3	3	36.8	29.8	broken tip	honey	yes	no	yes	no	no	
47	92	37.1	30.1	semi-round	slightly honey	yes	on edges	no	no	no	
17	44	38.2	30.3	round	slightly honey	yes	no	no	no	no	
21	54	41.6	30.6	euhedral	honey	yes	no	no	no	no	
29	5	42.4	31.1	semi-round	colorless	yes	no	yes	no	no	
19	50	42.8	31.4	round	honey	no	no	no	no	no	
40	41	44.7	21.7	round	honey	yes	no	yes	no	no	
31	9	44.7	32.1	euhedral	slightly honey	yes	no	no	no	no	small, dark
33	18	46.8	32.4	semi-round	honey	yes	no	no	no	no	small
1	1	47.7	32.8	euhedral	slightly honey	yes	no	no	no	no	
23	63	48.2	33.2	broken tip-euhedral	honey	yes	no	no	no	no	
43	66	49.6	33.5	semi-round	honey	no	no	no	no	no	
50	105	49.9	33.8	semi-round	honey	yes	no	no	no	no	
16	41	50.2	34.0	broken tip	honey	no	no	no	no	no	dark
4	7	50.8	34.2	euhedral	slightly honey	yes	no	no	no	no	
9	20	52.6	34.6	euhedral	honey	yes	no	yes	no	no	
30	6	54.7	35.1	euhedral	colorless	yes	no	no	no	no	
13	34	55.9	35.3	euhedral	slightly honey	yes	no	no	no	no	
11	25	56.3	35.6	euhedral	honey	yes	no	no	no	no	small
12	26	57.0	35.8	euhedral	slightly honey	yes	no	no	no	no	
46	85	57.9	36.0	broken tip-euhedral	honey	yes	no	no	no	no	
36	27	58.1	36.4	semi-round	honey	yes	no	no	no	no	
37	28	63.0	37.0	euhedral	colorless	yes	no	no	no	no	
2	2	67.3	37.4	euhedral	slightly honey	yes	yes	no	no	no	long
5	8	71.9	37.9	euhedral	slightly honey	yes	no	no	no	no	
18	47	77.7	38.4	round	honey	yes	no	no	no	no	
39	36	82.5	39.0	euhedral	slightly honey	no	no	no	no	yes	
34	22	92.7	39.4	euhedral	honey	yes	no	no	no	no	

05-17 - Kuithleth Formation - Khitrov Hills

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
46	88	18.5	18.7	semi-round	honey	yes	no	no	no	no	peanut-shaped
4	18	19.0	18.8	semi-round	dark honey	yes	no	no	no	no	
41	74	19.9	19.0	euhedral	colorless	yes	no	no	no	no	
39	61	20.1	19.3	euhedral	colorless	yes	no	no	no	no	
25	100	22.2	19.8	euhedral	honey	yes	no	no	no	no	wide
24	86	22.7	20.4	semi-round	dark honey	yes	no	no	no	no	
35	35	23.4	20.6	semi-round	colorless	yes	no	no	no	no	dark
44	80	25.3	21.2	round	honey	yes	no	no	no	no	long
3	14	26.9	21.7	euhedral	dark honey	yes	no	no	no	no	needlelike
27	14	27.0	22.4	euhedral	colorless	yes	no	yes	yes	no	needlelike
10	54	27.4	22.7	round	honey	yes	no	yes	yes	no	needlelike
48	99	27.8	22.9	euhedral	slightly honey	yes	no	no	no	no	needlelike
37	51	28.0	23.2	semi-round	colorless	yes	no	no	no	no	very small, dark
13	62	28.0	23.4	round	honey	yes	no	no	no	no	
49	100	28.5	23.9	round	colorless	yes	no	no	no	no	
33	29	28.9	24.4	broken half-euhedral	colorless	yes	no	no	no	no	
47	93	29.2	24.6	euhedral	honey	yes	no	no	no	no	dark
12	61	30.3	24.8	semi-round	honey	yes	no	no	no	no	
21	81	31.6	25.1	euhedral	colorless	yes	no	no	no	no	needlelike
9	42	31.7	25.4	semi-round	honey	yes	no	no	no	no	
23	83	32.1	25.6	semi-round	honey	yes	no	no	no	no	needlelike
50	102	32.4	26.1	euhedral	honey	yes	no	no	no	no	dark
34	34	32.5	26.2	semi-round	colorless	yes	no	yes	yes	no	
8	35	32.6	26.4	euhedral	honey	yes	no	no	no	no	wide
7	33	32.6	26.7	euhedral	slightly honey	yes	no	no	no	no	
5	22	33.1	26.8	semi-round	honey	yes	no	no	no	no	dark
18	68	33.1	26.9	round	honey	yes	no	no	no	no	
45	86	33.3	27.2	euhedral	honey	yes	no	no	no	no	long
28	15	33.7	27.5	euhedral	colorless	yes	no	yes	yes	no	long
14	64	33.8	27.6	semi-round	honey	yes	no	no	no	no	
2	7	34.0	27.7	semi-round	honey	yes	no	no	no	no	small, dark
19	75	34.2	28.1	broken piece-euhedral	honey	yes	no	no	no	no	
22	82	34.2	28.2	euhedral	honey	yes	no	no	no	no	dark
43	79	35.9	28.3	euhedral	honey	yes	no	no	no	no	
38	58	37.5	28.4	round	colorless	yes	no	no	no	no	
1	5	37.8	28.5	euhedral	dark honey	yes	no	no	no	no	small
16	66	38.8	28.7	euhedral	spotted honey	yes	no	no	no	no	long
15	65	40.8	28.9	euhedral	honey	yes	no	no	no	no	long, needlelike
42	78	41.9	29.3	semi-round	honey	yes	no	no	no	no	
30	18	43.2	29.4	round	honey	yes	no	yes	yes	no	
32	27	45.6	29.7	semi-round	colorless	yes	no	no	no	no	small
26	11	46.0	29.9	semi-round	colorless	yes	no	no	no	no	
36	37	46.1	30.2	semi-round	colorless	yes	no	no	no	no	
17	67	47.7	30.3	semi-round	spotted honey	yes	no	no	no	no	long
6	29	49.8	30.6	euhedral	slightly honey	yes	no	no	no	no	
29	17	50.5	30.9	semi-round	honey	yes	no	yes	yes	no	long
20	78	51.1	31.2	euhedral	honey	yes	no	no	no	no	long
11	58	52.2	31.9	semi-round	honey	yes	no	no	no	no	small
31	19	55.1	32.1	euhedral	honey	yes	no	no	no	no	long
40	72	67.1	32.4	euhedral	honey	yes	no	no	no	no	

KA 1 - Modern River

Grain #	Stage	Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
49		49	21.8	21.7	round	honey	yes	no	no	no	dark
19		67	22.7	22.1	semi-round	dark honey	yes	no	no	no	
6		15	24.7	22.8	euhedral	slightly honey	yes	on the right	no	no	
8		18	25.3	23.3	euhedral	honey	yes	no	no	no	
38		20	25.6	23.7	euhedral	honey	yes	yes	no	no	
2		74	25.8	24.1	semi-round	honey	yes	no	no	no	
18		55	26.1	24.4	euhedral	honey	yes	no	no	yes	
45		40	26.2	24.6	euhedral	honey	yes	no	no	no	
16		43	26.7	24.7	euhedral	honey	yes	yes	no	no	
37		18	27.7	24.9	semi-round	honey	yes	no	no	no	dark
22		74	27.7	25.0	euhedral	honey	yes	no	no	no	
1		1	30.6	25.5	euhedral	slightly honey	yes	on top	no	no	cloudy
7		16	31.9	26.4	euhedral	colorless	yes	no	no	no	
17		48	33.2	26.9	broken tip-euhedral	honey	yes	no	yes	no	
15		39	33.4	27.2	euhedral	honey	yes	on edges	no	no	
25		84	34.6	27.8	euhedral	honey	yes	at tips	no	yes	
50		51	34.7	28.2	round	honey	yes	no	no	no	dark
48		47	35.1	28.4	euhedral	honey	yes	yes	yes	no	
40		30	35.4	28.7	euhedral	honey	yes	on tips	no	no	
39		24	36.4	28.9	euhedral	honey	yes	no	yes	no	
20		68	36.5	29.3	euhedral	honey	yes	no	no	no	
41		34	38.0	29.6	euhedral	honey	yes	no	no	no	
33		13	38.1	30.1	euhedral	colorless	yes	yes	no	no	long
12		27	40.3	30.3	semi-round	honey	yes	no	no	no	
24		83	41.6	30.5	broken tip-euhedral	honey/yes	no	no	no	no	
47		45	42.0	31.0	broken piece	honey	yes	no	no	no	
10		24	42.0	31.3	semi-round	honey	yes	no	no	no	
27		2	43.8	31.5	euhedral	honey	yes	no	yes	no	
36		16	43.8	31.7	euhedral	honey	yes	no	no	no	long, needlelike
11		25	44.0	32.0	euhedral	honey	yes	on the right	no	no	small
32		10	44.9	32.3	semi-round	honey	yes	yes	no	no	
14		30	45.2	32.4	euhedral	honey	yes	no	no	no	dark
46		42	45.9	32.9	euhedral	honey	yes	no	no	no	
31		8	46.6	33.1	semi-round	honey	yes	on tips	no	no	
3		7	47.2	33.4	semi-round	honey	yes	no	no	no	
30		7	51.8	33.6	euhedral	honey	yes	on top	no	no	small, dark
23		75	51.9	33.9	round	honey	yes	on edges	no	no	
34		14	52.0	34.4	euhedral	honey	yes	no	no	no	
4		8	52.7	34.6	euhedral	honey	yes	no	no	no	
9		20	53.3	34.9	semi-round	honey	yes	no	no	no	
35		15	56.1	35.3	round	colorless	yes	no	no	no	
21		71	58.9	35.7	semi-round	honey	yes	on edges	no	no	
44		39	62.5	36.1	euhedral	honey	yes	no	no	no	long
13		29	62.8	36.6	semi-round	colorless	yes	no	no	yes	
29		4	62.9	37.3	broken-semi-round	honey	yes	no	no	no	
5		14	64.3	37.7	euhedral	honey	yes	yes	no	no	
26		1	66.9	38.1	semi-round	honey	yes	on tips	no	no	dark
42		36	67.2	38.4	euhedral	honey	yes	no	no	no	
28		3	69.0	38.9	euhedral	honey	yes	no	no	no	large
43		38	80.3	38.9	round	honey	yes	no	no	no	

KL 2 - Modern River

Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
13	43	21.9	21.9	21.9 semi-round	honey	yes	no	no	no	
21	64	23.0	23.0	22.6 euhedral	honey	yes	on left	no	no	long
28	4	24.6	24.6	23.6 semi-round	colorless	yes	no	no	no	
15	49	25.6	25.6	24.0 euhedral	honey	yes	no	no	no	
18	59	27.3	27.3	24.6 semi-round	honey	yes	no	yes	no	
2	13	28.1	28.1	25.0 broken-round	honey	yes	no	no	no	
34	40	28.1	28.1	25.2 semi-round	colorless	yes	no	yes	no	
17	56	28.6	28.6	25.7 euhedral	slightly honey	yes	no	no	no	dark
40	59	28.8	28.8	26.0 euhedral	colorless	yes	no	yes	no	long, needlelike
10	34	29.3	29.3	26.3 euhedral	slightly honey	yes	no	no	no	
24	70	30.2	30.2	26.5 semi-round	colorless	yes	no	no	no	long
26	1	30.3	30.3	27.0 semi-round	colorless	yes	yes	yes	no	
25	71	31.0	31.0	27.2 euhedral	honey	yes	no	yes	no	
19	62	31.1	31.1	27.5 round	honey	yes	on outside	no	no	
43	70	32.6	32.6	28.0 semi-round	honey	yes	yes	no	no	
14	47	32.7	32.7	28.1 euhedral	honey	yes	no	no	no	
47	84	33.2	33.2	28.4 euhedral	honey	yes	no	yes	no	dark
3	20	33.4	33.4	28.5 euhedral	colorless	yes	no	no	no	small
32	24	34.5	34.5	28.8 broken piece-euhedral	honey	yes	on tips	yes	no	
12	40	36.1	36.1	29.0 euhedral	honey	yes	no	no	no	small
35	44	36.6	36.6	29.5 semi-round	honey	yes	yes	no	no	long
49	91	37.4	37.4	29.6 euhedral	honey	yes	yes	no	no	long, needlelike
1	9	37.6	37.6	29.9 semi-round	slightly honey	yes	no	no	no	
4	21	37.6	37.6	30.1 round	honey	yes	no	no	no	
23	69	37.7	37.7	30.2 euhedral	colorless	yes	no	no	no	
22	66	38.1	38.1	30.3 semi-round	honey	yes	on tips	no	no	
50	97	39.6	39.6	30.7 broken piece	honey	yes	no	yes	no	
42	67	39.8	39.8	30.9 round	honey	yes	no	no	no	
8	32	41.0	41.0	31.0 euhedral	honey	yes	no	no	no	
30	19	43.3	43.3	31.3 semi-round	honey	yes	no	yes	no	
38	57	43.3	43.3	31.5 round	honey	yes	on bottom	no	no	dark
5	23	43.5	43.5	31.8 round	honey	yes	no	no	no	
36	55	44.3	44.3	32.0 euhedral	honey	yes	on tips	no	no	long, needlelike
27	3	45.0	45.0	32.2 semi-round	colorless	yes	no	no	yes	dark
48	85	46.8	46.8	32.4 euhedral	honey	yes	no	no	no	small
11	39	47.1	47.1	32.6 round	honey	yes	no	yes	no	
41	63	47.4	47.4	32.9 semi-round	honey	yes	no	no	no	
20	63	49.2	49.2	33.1 euhedral	honey	yes	on tip	no	no	
37	56	52.6	52.6	33.3 euhedral	honey	yes	no	no	no	dark
9	33	56.8	56.8	33.6 round	slightly honey	yes	no	no	no	
33	29	57.3	57.3	34.0 euhedral	honey	yes	yes	no	no	long, needlelike
44	71	58.3	58.3	34.4 semi-round	colorless	yes	yes	no	yes	dark
16	54	62.0	62.0	34.8 euhedral	colorless	yes	no	no	no	
7	31	63.1	63.1	35.0 euhedral	honey	yes	no	yes	no	
6	30	64.0	64.0	35.2 euhedral	slightly honey	yes	no	no	no	
46	78	67.3	67.3	35.7 broken piece	honey	yes	no	no	no	
45	72	72.8	72.8	36.4 broken tip-euhedral	honey	yes	no	no	no	
31	20	73.1	73.1	36.7 round	honey	yes	on left	no	no	
29	10	77.0	77.0	37.0 euhedral	colorless	yes	no	no	no	
39	58	78.0	78.0	37.2 semi-round	honey	yes	yes	no	no	

DK 3 - Modern River

Grain #	Stage Grain #	Grain Age (Ma)	Sum Age (Ma)	Zircon Shape	Zircon Color	Inclusions	Zoned	Cracked	Chipped	Other
39	101	15.5	15.5	15.5 euhedral	colorless	yes	no	yes	yes	
42	106	18.5	17.2	euhedral	honey	yes	no	yes	no	
44	108	19.3	17.9	semi-round	honey	yes	no	no	no	
34	85	19.8	18.5	euhedral	honey	yes	no	no	no	dark
19	40	25.8	20.0	semi-round	slightly honey	yes	no	no	no	
50	123	26.6	21.2	semi-round	honey	yes	no	yes	no	
23	45	28.1	21.4	euhedral	colorless	yes	no	no	no	
31	76	29.4	22.2	semi-round	slightly honey	yes	no	no	no	
32	80	30.9	23.1	broken tip-euhedral	honey	yes	no	yes	no	dark
18	35	31.8	24.3	euhedral	colorless	yes	no	yes	no	long, needlelike
24	49	32.0	25.4	euhedral	honey	yes	no	yes	no	
35	86	32.8	25.8	euhedral	honey	yes	no	no	no	
2	2	33.1	26.6	euhedral	colorless	yes	yes	no	no	long, needlelike
11	15	33.4	27.0	semi-round	honey	yes	no	yes	no	small
30	67	34.3	27.5	euhedral	colorless	yes	no	no	no	dark
15	27	34.5	27.9	broken piece-euhedral	slightly honey	yes	no	no	no	
36	97	35.6	28.3	semi-round	honey	yes	no	no	no	dark
3	4	36.4	28.7	euhedral	colorless	yes	on tip	no	no	
6	7	36.8	29.1	round	honey	yes	yes	yes	no	
8	12	36.9	29.4	semi-round	honey	yes	no	yes	no	
38	100	37.0	29.6	semi-round	honey	yes	no	yes	no	
20	41	37.9	29.8	euhedral	honey	yes	no	no	no	
48	117	38.2	30.1	euhedral	slightly honey	yes	no	yes	no	
14	25	38.4	30.4	euhedral	colorless	yes	no	no	no	
22	43	38.7	30.6	broken tip-euhedral	colorless	yes	no	no	no	
27	62	42.0	30.8	euhedral	honey	yes	no	yes	no	
33	80	42.3	31.2	euhedral	honey	yes	no	yes	no	needlelike
25	58	42.6	31.7	euhedral	honey	yes	no	yes	no	dark
12	21	43.8	32.1	broken tip-euhedral	slightly honey	yes	no	yes	no	long
10	14	45.1	32.5	semi-round	honey	yes	no	no	no	
41	103	45.1	32.9	euhedral	honey	yes	no	no	no	
45	109	45.7	33.2	semi-round	honey	yes	no	no	no	
49	120	46.0	33.6	euhedral	honey	yes	no	no	no	
7	8	46.7	33.8	broken piece	slightly honey	yes	no	yes	no	
1	1	47.3	34.1	semi-round	colorless	yes	yes	no	no	
17	32	48.0	34.4	semi-round	slightly honey	yes	no	no	no	
28	64	48.7	34.8	euhedral	honey	yes	no	no	no	
13	24	48.7	35.1	broken tip-semi-round	honey	yes	no	no	no	
43	107	49.4	35.3	semi-round	honey	yes	no	no	no	
40	102	49.7	35.6	semi-round	honey	yes	no	no	no	
16	28	49.8	35.8	round	honey	yes	no	no	no	
21	42	50.0	36.0	euhedral	honey	yes	no	yes	no	small
5	6	50.1	36.3	euhedral	honey	yes	no	no	no	long
9	13	50.2	36.5	semi-round	colorless	yes	no	no	no	
46	113	51.2	36.8	euhedral	honey	yes	no	no	no	dark
29	65	54.1	37.0	euhedral	honey	yes	on outside	yes	no	small
4	5	58.5	37.3	euhedral	slightly honey	yes	no	yes	no	
26	59	60.2	37.7	euhedral	honey	yes	no	no	no	
47	116	68.5	38.0	euhedral	honey	yes	no	no	no	
37	99	78.1	38.7	broken tip-euhedral	honey	yes	on right	no	no	