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STRATIGRAPHIC AND STRUCTURAL RELATIONS AT THE PENROSE DRIVE TRENCH SITE, SALT LAKE CITY SEGMENT, WASATCH FAULT ZONE

by
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2014

Summary of luminescence dating, Penrose Drive site

Sample No. 1	Horiz. VERT. Coordinates (m)	Trench (well)	Unit Sampled 2	Sediment Sampled	Stratigraphic Position	Laboratory Age ³ OSL (RLS) ± 1σ (yr before 2010)
PD-1	9.15, 9.40	West 1	1	Fine to medium sand	Upper part of pre-Bonnieville alluvial fan	~76,990 ± 3000 (134,730 ± 6850)
PD-12	10.11, 9.33	West 1	1	Fine sand laminae	Same stratigraphic position as L1	69,310 ± 4040
PD-13	11.84, 9.35	West 1	1	Medium-fine sand lens	Similar stratigraphic position as L1 & L2	64,370 ± 3960
PD-14	16.90, 7.63	West 1	1	Sandy gravel horizon	Same stratigraphic position as L1 & L3	58,790 ± 1700 (220,760 ± 6900)
PD-15	28.24, 1.77	West 2	2	Bonnieville silty sand	Immediately below boulder gravel (Photo stage)	16,390 ± 680
PD-16	30.86, 1.59	West 2	2	Bonnieville silty sand	Immediately below boulder gravel (Photo stage)	17,770 ± 340 (15,460 ± 610)
PD-17	7.10, 2.75	East 5	5	Scarp collumium	Upper part of unit 5 colluvial wedge	10,690 ± 800 (22,340 ± 1560)
PD-18	7.03, 3.62	East 6a	6a	Scarp collumium	Upper part of fine colluvial wedge	7300 ± 440
PD-19	5.95, 3.44	East 8b	8b	Scarp collumium	Upper-middle part of fine colluvial wedge	8300 ± 640 (8240 ± 570)

Summary of radiocarbon dating, Penrose Drive site

Sample No.	Horiz. VERT. Coordinates (m)	Trench (well)	Unit Sampled 2	Soil/Sediment Sampled	Organic Material Dated 2	Age ¹ (± 1σ) yr B.P. ± 1σ	Age ³ (cal yr B.P. ± 2σ)
PD-R1	6.28, 2.02	East 51	51	Charcoal from paleosol		9640 ± 65	11,410 ± 260
PD-R2	31.16, 2.20	West 52 (root)	52	Charcoal from paleosol	2 frag. Rosewood charcoal	9300 ± 65	10,620 ± 120
PD-R3	7.14, 2.35	East 51	51	Charcoal from paleosol	18 frag. unidentified hardwood charcoal	9500 ± 55	10,910 ± 240
PD-R4	24.82, 2.75	West 51	51	Shell from paleosol	Gastropod shell	sample not dated	
PD-R5	5.60, 3.55	East 53	53	Soil sediment from paleosol	24 frag. unidentified hardwood charcoal	3660 ± 45	3850 ± 140
PD-R6a	6.65, 2.75	East 52	52	Soil sediment from paleosol	14 frag. unidentified hardwood charcoal	9300 ± 50	10,570 ± 140
PD-R6b	6.65, 2.75	East 52	52	Soil sediment from paleosol	6 frag. unidentified frag. verted	9600 ± 50	10,120 ± 200
PD-R7	6.58, 2.23	East 51	51	Soil sediment from paleosol	Many frag. unidentified hardwood charcoal	sample not dated	
PD-R8	6.17, 3.50	East (west) 53	53	Soil sediment from paleosol	Microcharcoal	540 ± 50	6280 ± 120
PD-R9a	22.84, 5.06	West 54	54	Soil sediment from paleosol	4 frag. unidentified hardwood charcoal	3960 ± 45	4420 ± 160
PD-R9b	22.84, 5.56	West 54	54	Soil sediment from paleosol	Microcharcoal	3600 ± 45	4000 ± 120
PD-R10a	23.6, 4.80	West 53	53	Soil sediment from paleosol	1 frag. Pinus-type seed, charred	5800 ± 75	6500 ± 160
PD-R10b	23.6, 4.80	West 51	51	Soil sediment from paleosol	Microcharcoal	5470 ± 40	6270 ± 80
PD-R11	38.6, 4.20	West 51 (base)	51	Soil sediment from paleosol	1 fragment Quercus charcoal	495 ± 35	530 ± 40
PD-R12	38.6, 3.05	West 51 (base)	51	Soil sediment from paleosol	3 fragments Adiantum charcoal	495 ± 35	530 ± 40
PD-R13	24.81, 3.03	West 51	51	Soil sediment from paleosol	7 fragments unidentified hardwood charcoal	10,000 ± 75	11,510 ± 320
PD-R14a	23.41, 5.46	West 54	54	Soil sediment from paleosol	Many frag. unidentified hardwood charcoal	3700 ± 65	4180 ± 220
PD-R14b	23.41, 5.46	West 54	54	Soil sediment from paleosol	Microcharcoal	3700 ± 40	4170 ± 140
PD-R15	20.00, 3.40	West 52	52	Soil sediment from paleosol	11 frag. unidentified hardwood charcoal	8400 ± 50	10,520 ± 140
PD-R16	20.0, 2.0	West 51	51	Shells from paleosol and unit	Many gastropod shells	sample not dated	

¹ See appendix A for descriptions of stratigraphic units.
² Generation and identification by Paleo Research Institute (Golden, Colorado). See appendix C for additional sample notes.
³ Laboratory reported radiocarbon age with one standard deviation uncertainty. B.P. is before present (AD 1950).
⁴ Mean calendar-calibrated age and two-sigma uncertainty, rounded to nearest decade, determined using OxCal calibration software (v. 4.1, Bronk Ramsey, 2005) and the IntCal09 atmospheric data set (Reimer and others, 2009).