

Table DR1. Whole rock geochemistry of Jurassic volcanic and plutonic rocks in the lower Colorado River region, southern California and southwest Arizona.

Analytical methods: major elements—wavelength-dispersive X-ray fluorescence (Taggart et al., 1987); FeO, H<sub>2</sub>O, CO<sub>2</sub> (Jackson et al., 1987); Rb—energy-dispersive X-ray trace elements by energy dispersive X-ray fluorescence (Johnson and King, 1987) or direct-current-arc quantitative emission spectrometry (Golightly et al., 1987) \* Analytical data from Hayes (1992); only total Fe concentration and LOI reported.

Table DR2. U-Pb thermal ionization mass spectrometry (TIMS) geochronologic data for zircon and sphene from Jurassic volcanic and plutonic rocks, lower Colorado River region, Arizona and California. Sample locations are UTM WGS84.

Table DR3. U-Pb SHRIMP-RG data for volcanic and plutonic rocks from the lower Colorado River region, Arizona and California. Sample locations are in UTM WGS84. Data reduction for geochronology follows the methods described by Williams (1996), and Ireland and Williams (2003), and uses the MS Excel add-in Squid and Isoplot programs of Ludwig (2001, 2008) using R33 (419 Ma) and Temora (416.8 Ma) standards as a references (Black et al., 2004).

Table DR4. Trace element geochemistry of zircon from Jurassic volcanic and plutonic rocks in the lower Colorado River region, Arizona and California. 1. Analytical procedures are described in Barth and Wooden (2010).

Table DR5. Pb isotopic compositions for feldspar from Jurassic volcanic and plutonic rocks, lower Colorado River region, Arizona and California. 1. Isotopic compositions measured from feldspar mineral separate after standard chromatography separation of elements Finnigan MAT261 at the U.S. Geological Survey, Menlo Park.

Table DR6. Sr and Nd isotopic compositions for Jurassic volcanic and intrusive rocks, lower Colorado River region, Arizona and California.

1. Isotopic compositions measured after standard chromatography separation of elements on Finnigan MAT261 at the U.S. Geological Survey, Menlo Park. Rubidium and Sr concentrations are from Table 1. Sm and Nd concentrations were measured using isotope dilution techniques at the U.S. Geological Survey in Menlo Park. 2. Locations: CM, Chocolate Mountains; CMM, Cargo Muchacho Mountains; DRM, Dome Rock Mountains; MM; Mule Mountains TM, Trigo Mountains; TP, Trigo Peaks.

### References Cited (for Data Repository)

- Barth, A.P., and Wooden, J.L., 2010, Coupled elemental and isotopic analysis of polygenetic zircons from granitic rocks by ion microprobe, with implications for melt evolution and the source of granitic magmas. *Chemical Geol.*, 277, p. 149-159.
- Black, L.P., Kamo, S.L., Allen, C.M., Davis, D.W., Aleinikoff, J.N., Valley, J.W., Mundil, R., Campbell, I.H., Korsch, R.J., Williams, I.W., and Foudoulis, C., 2004, U-Pb microprobe geochronology by the monitoring of a trace-element-related matrix effect; SHRIMP, ID-TIMS, ELA-ICP-MS and oxygen isotope documentation for a series of zircon standards: *Chemical Geology*, v. 205, p. 115–140, doi:10.1016/j.chemgeo.2004.01.003.

- Golightly, D.W., Dorrzapf, A.F., Mays, R.E., Fries, T.L., and Conklin, N.M., 1987, Analysis of geological materials by direct-current arc emission spectrography and spectrometry, *in* Baedeker, P.A., ed., *Methods for geochemical analysis: U.S. Geological Survey Bulletin 1770*, p. A1–A13.
- Hayes, E.M., 1992, Petrology of Jurassic plutons and older crystalline units, the Cargo Muchacho Mountains, southeastern California: Los Angeles, University of Southern California, unpublished M.Sc. thesis, 174 p.
- Ireland, T.R., and Williams, I.S., 2003, Considerations in zircon geochronology by SIMS, *in* Hanchar, J.M., and Hoskin, P.W.O., eds.: *Zircon: Reviews in Mineralogy and Geochemistry*, v. 53, p. 215–241.
- Jackson, L.L., Brown, F.W., and Neil, S.T., 1987, Major and minor elements requiring individual determination, classical whole rock analysis, and rapid rock analysis, *in* Baedeker, P.A., ed., *Methods for geochemical analysis: U.S. Geological Survey Bulletin 1770*, p. G1–G23.
- Johnson, R.G., and King, B.-S.L., 1987, Energy-dispersive X-ray fluorescence spectrometry, *in* Baedeker, P.A., ed., *Methods for geochemical analysis: U.S. Geological Survey Bulletin 1770*, p. F1–F5.
- Krogh, T.E., 1973, A low-contamination method for hydrothermal decomposition of zircon and extraction of U and Pb for isotopic age determinations: *Geochimica et Cosmochimica Acta*, v. 37, p. 485–494, doi:10.1016/0016-7037(73)90213-5.
- Ludwig, K.R., 2001, SQUID: A user's manual: Berkeley Geochronology Center, Special Publication 2, 22 p.
- Ludwig, K.R., 2008, User's manual for Isoplot 3.6: A geochronological toolkit for Microsoft Excel: Berkeley Geochronology Center, Special Publication 4, 77 p.
- Mattinson, J.M., 1987, U-Pb ages of zircons: A basic examination of error propagation: *Chemical Geology*, v. 66, p. 151–162.
- Taggart, J.E., Lindsay, J.R., Scott, B.A., Vivit, D.V., Bartel, A.J., and Stewart, K.C., 1987, Analysis of geologic materials by wavelength dispersive x-ray fluorescence spectrometry, *in* Baedeker, P.A., ed., *Methods for geochemical analysis: U.S. Geological Survey Bulletin 1770*, p. E1–E19.
- Williams, I.S., 1996, U-Th-Pb geochronology by ion microprobe: *Reviews in Economic Geology*, v. 7, p. 1–36.

Table DR1. Whole rock geochemistry of Jurassic volcanic and plutonic rocks in the lower Colorado River region, southern California and southwest Arizona

	SiO2	TiO2	Al2O3	FE2O3	FeO	MgO	CaO	Na2O	K2O	P2O5	MnO	H2O+	H2O-	CO2	TOTAL	Fe(total)	Ba	La	Nb	Rb	Sr	Y	Zr
DOME ROCK SEQUENCE																							
Dome Rock Mountains																							
TM-826	64.6	0.59	15.2	2.56	2.09	1.67	3.17	3.22	4.45	0.2	0.07	0.97	0.04	0.16	99.0	4.9	1050	34	19	175	335	34	195
TUK-18	64.7	0.52	15.3	1.83	2.32	1.55	2.89	3.08	4.63	0.17	0.15	1.02	0.18	0.39	98.7	4.4	1200	22	16	155	345	34	166
TUK-63	65.5	0.51	15.4	2.6	1.61	1.47	2.96	3.55	3.72	0.15	0.07	1.04	0.07	0.28	98.9	4.4	930	50	17	130	320	32	210
TUK-13	67.9	0.5	14.4	3.32	0.81	1.41	3.32	2.08	3.59	0.16	0.06	1.23	0.11	0.11	99.0	4.2	1050	48	18	150	175	30	175
TM-844	69.9	0.38	13.4	2.88	0.25	0.46	0.61	1.19	8.67	0.13	0.02	0.46	0.02	0.26	98.6	3.2	1500	<20	18	285	80	30	160
Cargo Muchacho Mts																							
TUK 46	66.6	0.26	16.9	1.2	1.3	0.55	3.88	3.5	4.01	0.21	0.1	0.42	0.2	0.04	99.2	2.6	1500	50	10	130	930	38	240
MC 18	61.4	0.49	17.5	2.07	3.07	2.26	4.16	3.95	2.54	0.34	0.13	1.03	0.16	0.3	99.4	5.5	680	38	10	78	990	38	194
MC 19	61.5	0.5	17.3	3.84	1.46	2.14	4.24	3.53	3.37	0.33	0.12	0.69	0.2	0.01	99.2	5.5	1100	54	10	94	1100	38	186
MC 31	64.7	0.54	15.8	4.05	1.16	1.3	3.92	3.14	2.9	0.29	0.09	0.89	0.14	0.05	99.0	2.3	1100	26	12	100	700	28	170
MC 50	59.8	0.79	16.2	2.59	3.91	3	4.73	3.4	3.65	0.26	0.12	0.82	0.17	0.06	99.5	6.9	920	30	24	120	540	50	240
MC 53	54.4	0.37	20.9	1.59	3.18	1.7	6.69	3.9	3.77	0.63	0.19	0.81	0.41	0.05	98.6	5.1	2100	80	<10	110	1300	50	370
MC 169	66.2	15.1	2.69	1.39	1.23	2.82	4.15	4.83	0.38	0.23	0.05	0.26	0.15	0.02	99.5	4.2	1300	68	10	166	710	24	178
MC 170	66.7	16.2	1.98	1.25	0.95	2.4	4.24	4.2	0.32	0.17	0.04	0.26	0.2	0.02	98.9	3.4	1400	30	10	184	1100	16	144
MC 108	68.7	14.4	2.52	1.27	0.51	1.74	3.51	5.69	0.39	0.23	0.04	0.07	0.08	0.14	98.6	3.9	1200	44	12	205	710	20	195
MC 142	68.0	15.1	-0.26	2.71	1.17	3.11	3.86	4.27	0.43	0.15	0.05	0.25	0.08	0.01	98.9	2.8	1300	66	16	152	415	32	220
MC 148	67.0	16.5	1.08	1.5	0.88	2.71	3.44	5.16	0.3	0.16	0.08	0.29	0.27	0.01	99.4	2.7	1300	40	10	188	770	16	138
MC 168	67.9	14.9	2.32	1.1	0.72	2.75	3.1	5.52	0.26	0.14	0.08	0.23	0.14	0.11	98.6	3.5	1200	30	10	182	650	16	114
MC 228	60.3	15.7	3.18	3.1	2.78	5.4	3.12	3.42	0.78	0.26	0.12	0.24	0.14	0.2	98.7	6.6	950	48	16	180	530	40	260
MC 229	63.6	16.6	2.81	1.39	1.27	3.1	4.65	4.92	0.4	0.24	0.08	0.11	0.06	0.05	99.3	4.4	1500	30	10	160	800	18	146
MC 231	59.6	15.9	3	3.13	3.07	5.68	2.95	3.5	0.8	0.24	0.11	0.93	0.11	0.18	98.6	6.5	1100	66	12	142	620	30	220
MC 233	60.5	15.7	3.02	3.26	3.17	6.03	3.87	2.17	0.81	0.24	0.12	0.63	0.14	0.07	99.7	6.6	520	30	14	80	630	28	220
MC 217	71.3	14.2	1.07	1.07	0.63	1.44	3.36	5.33	0.32	0.08	0.06	0.16	0.21	0.01	99.2	2.3	1200	30	20	210	290	32	235
MC 211A	70.7	14.2	1.24	1.4	0.72	0.98	3.82	5.17	0.35	0.11	0.06	0.1	0.1	0.01	98.6	2.8	990	42	20	240	220	28	225
MC 209B	69.6	14.3	1.45	1.32	1.05	2.44	3.39	4.61	0.35	0.13	0.07	0.33	0.07	0.1	98.6	2.9	1000	62	18	182	335	24	210
TUK 81	69.1	0.27	14.8	2.01	1.31	0.74	2.47	4.17	3.72	0.14	0.07	0.26	0.06	0.01	99.1	3.5	1200	42	10	96	890	18	132
KITT PEAK - TRIGO PEAKS SUPERUNIT																							
Araz Wash diorite unit																							
Dome Rocks Mts.																							
TM 937	56.9	0.97	16.8	4.0956	3.04	2.81	6.02	3.17	3.66	0.41	0.16	1.4	0.06	0.04	99.5	7.5	860	30	13	152	530	36	200
TM 941	58.6	0.69	15.4	2.7308	4.72	2.9	4.91	4.01	3.24	0.22	0.21	0.81	0.09	0.56	99.1	8.0	700	<30	15	142	330	38	194
TM 908	58.8	0.93	16.5	4.0958	2.22	2.57	5.49	3.54	2.93	0.37	0.13	1.43	0.17	0.05	99.2	6.6	690	49	12	166	475	36	182
TM 940	60.7	0.77	14.9	3.4032	2.88	3.1	4.97	2.71	4.44	0.25	0.14	0.43	0.16	0.3	99.2	6.6	790	35	17	148	350	36	250
Trigo Peaks and northern Trigo Mts.																							
TM 652	43.7	0.31	18.6	3.9674	4.66	13.4	9.55	0.98	0.66	0.11	0.1	3.69	0.19	0.37	100.3	9.1	165	20	10	16	640	10	40
TM 562	43.8	0.96	21.1	6.1842	5.78	5.73	12.7	1.58	0.42	0.09	0.1	1.39	0.09	0.06	100.0	12.6	210	20	10	20	730	10	48
TM 453	48.4	1.53	20.3	4.3263	3.67	3.2	8.72	2.99	2.73	0.99	0.14	1.57	0.18	0.12	98.9	8.4	2000	50	13	66	1150	45	220
TM 642	48.9	0.6	18.3	3.6483	4.47	7.35	10.3	2.02	1.12	0.19	0.12	2.7	0.16	0.04	99.9	8.6	860	20	10	32	600	14	95
TM 790	50.2	1.26	16.4	6.1161	4.49	5.24	8.49	3.03	1.69	0.31	0.17	2.14	0.19	0.07	99.8	11.1	750	30	10	39	650	27	150
TM 443	50.9	1.01	16.7	5.3494	4.46	6.19	8.2	2.65	1.56	0.31	0.13	1.77	0.16	0.16	99.5	10.3	860	30	10	54	610	24	180
TM 775	51.1	1.7	17.2	3.189	5.1	4.02	7.4	4.25	1.27	0.99	0.13	2.68	0.07	0.94	100.0	8.9	500	40	12	28	590	40	190
TM 640	52.4	1.03	16.8	4.1286	4.74	5.76	7.44	2.84	1.93	0.4	0.13	2.15	0.16	0.13	100.0	9.4	900	35	14	60	740	20	135
TM 561	54.3	0.95	18.6	3.9981	4.29	3.17	6.51	4.45	2	0.43	0.16	0.91	0.07	0.07	99.9	8.8	700	50	18	33	770	34	200
TM 789	54.8	1.18	16	3.4683	4.47	4.52	6.67	3.46	1.79	0.33	0.13	2.13	0.08	0.71	99.7	8.4	900	30	10	63	500	27	140
TM 457	55.4	0.95	17.3	4.5155	3.95	3.74	6.94	3.16	1.99	0.29	0.13	1.19	0.07	0.11	99.7	8.9	750	50	13	39	690	28	180
TM 449	73.0	0.21	13.7	0.74	0.94	0.46	1.71	3.33	4.28	0.06	0.02	0.35	0.02	0.1	98.9	1.8	1700	40	<10	49	790	21	400
TM 452	73.9	0.17	13.6	0.8018	0.62	0.35	1.46	3.26	4.74	0.05	0.04	0.28	0.01	0.08	99.4	1.5	1100	30	13	110	220	34	150
TM 398	76.6	0.15	12.3	0.59	0.15	0.23	0.68	2.74	5.15	0.05	0.02	0.26	0.09	0.07	99.1		570	45	10	96	88	10	150
Central Trigo Mts.																							
TM 408	52.3	0.77	17.6	3.5982	3.38	5.6	10.5	2.83	1.18	0.17	0.12	1.76	0.2	0.21	100.2	7.4	530	20	10	32	600	20	88
7 DT 1	59.3	0.7	17.5	3.1574	2.66	2.42	4.74	4.14	2.68	0.32	0.12	1.51	0.13	0.23	99.6	6.1	1400	34	10	56	730	18	210
Southern Trigo Mts. and eastern Chocolate Mts.																							
PT 360	45.0	0.97	22.4	3.7581	4.29	5.44	14.6	1.76	0.26	0.06	0.09	1.61	0.06	0.15	100.4	8.5	240	40	<10	<10	810	<10	44
PT 280	45.7	0.96	17	3.6955	5.95	8.94	12.7	1.71	0.22	0.06	0.14	2.35	0.1	0.47	100.0	10.3	145	20	10	10	580	10	38
PT 279	46.9	0.28	25.6	1.7258	3.22	5.57	12	2.58	0.34	0.05	0.06	1.86	0.11	0.13	100.4	5.3	185	20	10	20	800	10	30
PT 383	51.8	1.42	16.2	4.3564	4.76	5.32	8.48	3.07	2.07	0.3	0.16	1.63	0.13	0.11	99.8	9.6	960	60	20	62	490	32	176
PT 372	52.7	1.43	14.5	2.395	4.5	7.39	11	2.78	1.38	0.23	0.14	1.22	0.11	0.04	99.8	7.4	325	<30	18	32	450	22	116
PT367	60.3	0.69	17.6	3.1359	2.31	2.14	5.36	3.84	2.55	0.24	0.1	0.89	0.23	0.29	99.7	5.7	1400	46	10	70	560	28	230
Cargo Muchacho Mts.																							

AG 36	46.1	0.48	16	2.44	6.9	12.2	9.93	1.52	1.02	0.1	0.21	3.01	0.08	0.01	100.0	10.1	345	30	10	52	490	14	60
AG 48	53.6	1.06	17.3	4.03	4.58	3.55	8.24	2.92	2.53	0.33	0.15	1.22	0.16	0.04	99.7	9.1	970	30	10	78	580	32	146
AG 31	54.6	0.9	16.5	2.85	5.1	4.49	7.83	2.92	2.26	0.32	0.14	1.23	0.07	0.18	99.4	8.5	690	48	14	74	560	34	144
88-21*	57.0	0.85	16.49			7.26	7.76	2.85	2.01	0.21	0.14				100.0	7.3	386	21	13	78	443	27	116
AG 46	57.2	0.51	16.1	4.3	3.07	4.18	3.49	6.94	2.88	2.51	0.12	1.26	0.19	0.01	102.8	7.7	480	66	16	96	485	44	114
7 DT 7	58.7	0.23	15.9	2.67	4.29	3.88	6.36	2.76	2.97	0.76	0.12	0.87	0.18	0.05	99.7	7.4	660	48	10	102	435	34	186
88-7a*	60.5	0.68	17.29			2.42	5.93	3.65	2.29	0.2	0.14				96.6	5.7	1008	31	13	68	534	21	160
88-22*	62.1	0.71	16.93			2.59	5.22	3.18	3.46	0.22	0.14				97.0	5.7	992	24	18	109	424	32	171
MC 1	62.3	0.71	15.5	2.19	3.41	2.27	4.87	2.91	3.47	0.24	0.1	0.84	0.12	0.22	99.2	6.0	1000	50	19	97	440	39	250
PT 290	62.4	0.75	15	2.19	3.62	2.5	4.1	2.99	4.46	0.2	0.1	0.7	0.12	0.08	99.2	6.2	1050	45	20	170	360	38	310
88-5*	62.4	0.7	16.41			2.39	5.12	3.07	3.28	0.2	0.14				96.0	5.5	1127	30	18	107	543	30	182
MC 289	62.7	0.74	15.4	2.38	3.16	2.44	4.63	2.98	4.1	0.22	0.1	0.67	0.09	0.01	99.6	5.9	950	48	18	154	360	44	290
AG 30	63.6	0.56	16.1	2.33	2.4	1.91	4.62	3.22	3.69	0.18	0.08	0.65	0.07	0.11	99.5	5.0	940	72	16	114	435	34	172
7DT6	63.7	0.58	15.7	2.3	2.76	2.03	4.34	2.92	4.03	0.18	0.09	0.81	0.12	0.11	98.6	5.4	1000	42	12	102	430	44	190
PT 291	63.7	0.55	15.7	2.07	2.57	1.78	4.31	3.06	4.05	0.23	0.11	0.77	0.03	0.16	99.1	4.9	900	62	15	120	410	36	280
AG 4	63.9	0.57	15.2	2.0115	3.35	2.07	2.44	4.62	3.24	0.27	0.24	0.53	0.22	<0.01	98.7	5.7	850	60	16	174	325	36	172
AG 47	64.1	0.52	15.6	1.98	2.56	1.85	4.28	3.09	3.84	0.18	0.1	0.72	0.15	0.12	99.1	4.8	1000	48	12	140	425	30	146
MC 44	65.2	0.58	15.3	1.66	3.2	1.95	2.98	3.33	3.61	0.18	0.16	0.88	0.11	0.05	99.2	5.2	1000	54	13	100	350	36	250
MC 58	56.1	0.72	17	3.58	3.75	3.12	6.88	3.62	2.98	0.41	0.15	0.82	0.07	0.19	99.4	7.7	1400	48	10	84	960	26	110
MC 290	63.6	0.45	15.8	2.1528	2.52	1.6	4.38	3.69	3.88	0.3	0.09	0.52	0.12	0.16	99.3	5.0	1000	50	12	160	850	22	154
TUK 57	64.5	0.36	16	2.27	1.67	1.31	4.07	3.8	3.83	0.25	0.1	0.65	0.16	0.3	99.3	4.1	1000	38	14	96	860	24	118
7DT8	64.9	0.46	15.3	2.61	1.81	1.45	4.14	3.69	3.83	0.31	0.1	0.28	0.17	0.17	99.2	4.6	980	42	12	102	800	28	235
MC 295	65.1	0.43	15.1	2.12	1.95	1.36	3.66	4.25	4.24	0.32	0.1	0.26	0.11	0.27	99.3	4.3	1100	32	14	120	1000	28	275
MC 61	67.3	0.44	15.6	1.63	1.15	0.65	3.01	4.3	3.97	0.2	0.09	0.26	0.14	0.13	98.9	2.9	1250	60	18	93	930	30	200
TUK 58	69.6	0.18	15.7	0.99	0.53	0.12	0.92	3.57	5.22	<0.05	0.03	0.35	0.13	0.01	97.4	1.6	1200	<30	14	140	980	20	126

#### Middle Camp porphyritic granodiorite

##### Dome Rock Mountains

TM 791	63.0	0.37	18.5	2.84	1.33	1.03	4.4	4.75	1.81	0.15	0.02	0.85	0.04	0.07	99.2	4.3	1700	40	10	49	790	21	400
TM 782	66.6	0.42	14.8	1.9224	1.16	1.05	2.35	3.36	4.88	0.17	0.07	0.94	0.09	1.24	99.1	3.2	800	40	13	230	220	30	250
TM 908	67.3	0.44	14.9	3.7659	1.37	1.23	2.98	3.25	4.36	0.14	0.08	0.74	0.09	<0.01	100.6	3.7	700	62	17	162	285	31	174
TM 938	68.1	0.42	14.7	3.604	1.11	1.19	2.92	3.15	4.44	0.14	0.05	0.78	0.08	<0.01	100.7	3.4	810	40	15	146	260	26	152
TM 911	68.9	0.37	14.3	1.2939	1.02	0.99	2.69	3.06	4.52	0.12	0.08	0.71	0.09	0.14	98.3	3.0	840	51	14	150	255	23	160

##### Trigo Peaks

TM 634	60.5	0.73	17.1	3.7659	2.31	2.29	5.02	3.88	2.52	0.25	0.12	0.92	0.08	0.07	99.6	6.3	650	60	16	94	440	26	260
TM 653	60.0	0.76	17.1	3.604	2.6	2.33	5.29	3.46	3.12	0.25	0.1	0.56	0.08	0.03	99.3	6.5	1350	45	16	90	540	30	290
TM 649	67.5	0.52	14.5	2.17	1.59	1.36	3.15	2.77	4.38	0.16	0.06	0.69	0.03	0.23	99.1		1050	45	14	100	370	22	195
TM 635	70.0	0.43	14	1.83	1.12	1.07	2.69	2.96	4.28	0.12	0.04	0.46	0.07	0.12	99.2		960	70	12	115	330	22	190

##### Trigo Mountains

TM 558	61.3	0.72	17.1	3.0285	2.65	2.02	5.12	3.77	2.83	0.26	0.1	0.59	0.07	0.05	99.6	6.0	1100	40	16	96	490	34	275
PT 285	61.3	0.75	16.6	2.95	2.7	2.22	5.07	3.59	3.04	0.24	0.09	0.76	0.09	0.14	99.5	6.0	1400	45	16	90	540	30	260

##### Mule Mountains

TUK 9	63.4	0.63	15.2	2.57	1.61	1.7	3.1	3.57	4.16	0.23	0.08	1.27	0.05	1.65	99.2	4.4	1400	40	16	140	288	26	216
TUK 8	64.0	0.67	15.6	2.45	1.73	1.81	3.5	3.15	4.38	0.24	0.1	1.01	0.07	0.23	98.9	4.4	1600	41	17	170	408	32	250
TM 228	67.6	0.48	14.8	2.02	1.37	1.27	3.19	2.79	4.48	0.15	0.06	0.66	0.13	0.15	99.2	3.5	1150	45	14	115	415	24	190
TM 239	68.6	0.59	14.9	1.9	1.08	1.03	2.57	3.77	4.31	0.18	0.06	0.63	0.05	0.21	99.9	3.1	1300	70	20	150	360	33	300
TM 238	69.1	0.7	13.6	1.84	2.31	0.81	1.71	2.85	4.89	0.18	0.08	0.6	0.06	0.06	98.8	4.4	1100	80	22	160	240	38	310
TM 256	69.4	0.39	14.7	1.91	0.77	0.96	3.01	3.08	4.22	0.12	0.05	0.74	0.05	0.22	99.6	2.8	850	25	12	120	350	18	150

##### Little Maria Mountains

9DT1	66.8	0.5	15.1	2.31	1.66	1.33	3.2	3.5	3.9	0.16	0.06	0.85	0.1	0.42	99.9	3.8	850	62	12	164	360	32	192
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##### Eagle Mountains

Eagle	58.7	0.84	17.4	3.19	3.32	2.61	5.77	3.6	2.85	0.29	0.11	0.63	0.17	0.08	99.6	6.9	1300	43	14	75	540	27	250
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#### Gold Rock Ranch granite unit

##### Dome Rock Mountains

TM-939	73.9	0.16	13.3	1.84	0.31	0.36	1	3.02	5.38	<0.05	0.02	0.46	0.08	0.01	99.8	1.3	380	<30	15	194	112	27	95
TM-594	75.3	0.17	12.5	0.8483	0.47	0.36	0.84	2.61	5.59	0.05	0.02	0.39	0.03	0.13	99.3	1.4	400	40	15	250	130	25	110
TUK-68	75.1	0.15	12.5	0.2048	0.32	0.26	0.64	2.77	5.58	<0.05	<0.02	0.41	0.13	0.18	98.2	0.6	270	54	24	194	79	28	87
TM-909	75.5	0.16	12.5	1.9	0.33	0.32	1.32	2.93	5.04	<0.05	0.02	0.44	0.08	0.07	100.6	1.4	335	<30	14	178	91	26	88
TM-910	75.6	0.14	12.4	2.02	0.23	0.23	0.8	2.82	5.47	<0.05	0.02	0.33	0.06	<0.01	100.1	1.0	275	35	17	210	74	24	77
TM-912	77.2	0.11	12	1.91	0.12	0.14	0.74	2.84	5.47	<0.05	<0.02	0.24	0.07	0.05	100.9	0.7	98	32	14	196	47	15	77

##### Trigo Peaks

TM 651	70.2	0.31	15.5	1.2597	0.73	0.52	2.02	3.8	4.7	0.07	0.03	0.39	0.09	0.03	99.6	2.1	2100	45	10	140	410	26	270
TM 653	72.0	0.34	13.7	1.2939	1.51	0.58	1.9	2.94	4.47	0.1	0.02	0.56	0.04	0.05	99.5	3.0	850	90	20	180	185	44	290
TM 602	72.1	0.35	13.5	1.3141	0.69	0.42	0.93	2.73	6.51	0.09	0.02	0.42	0.08	0.1	99.3	2.1	750	180	50	310	110	84	260
TM 646	73.4	0.23	13.5	1.074	0.6	0.52	1.66	3.27	4.36	0.07	0.04	0.31	0.06	0.12	99.2	1.7	1150	40	12	125	220	23	175

TM 637	74.2	0.18	13	0.8915	0.35	0.29	1.06	2.81	5.37	0.05	0.02	0.38	0.16	0.06	98.8	1.3	980	40	24	170	125	30	190
TM 415	74.3	0.19	13	1.0181	0.29	0.32	0.93	3.03	5.31	0.05	0.02	0.41	0.14	0.06	99.1	1.3	1050	80	22	170	150	36	195
TM 647	74.1	0.22	13.1	0.8661	0.49	0.38	1.38	3.17	4.58	0.06	0.02	0.22	0.03	0.11	98.7	1.4	1100	40	16	120	190	24	180
TM 636	75.7	0.14	12.4	0.8404	0.36	0.3	1.08	2.55	5.11	0.05	0.02	0.29	0.06	0.04	98.9	1.2	510	50	14	185	140	16	115
TUK 34	75.8	0.17	12.5	0.7062	0.58	0.3	1.01	3.09	4.85	0.05	0.02	0.17	0.01	0.08	99.3	1.4	350	50	19	210	100	32	140
TUK 36	76.0	0.12	12.5	0.6081	0.29	0.25	1.26	2.28	5.43	0.05	0.02	0.28	0.06	0.06	99.2	0.9	1100	58	10	110	310	14	84
TM 636a	76.7	0.11	12.2	0.7726	0.34	0.28	0.99	2.65	5.17	0.05	0.02	0.33	0.05	0.04	99.7	1.2	395	60	12	175	125	14	88

*Cargo Muchacho Mts*

MC 290	63.6	0.45	15.8	2.15	2.52	1.6	4.38	3.69	3.8	0.3	0.09	0.52	0.12	0.16	99.2	5.0	1000	50	12	160	850	22	154
ag 4	63.8	0.57	16.2	2.01	3.35	2.07	2.44	4.62	3.24	0.27	0.24	0.53	0.22	0.01	99.6	5.7	850	60	16	174	325	36	172
MC 291	63.9	0.69	15.2	1.97	2.99	2.11	4	2.97	4.53	0.19	0.09	0.52	0.13	0.02	99.3	5.3	1100	52	18	162	320	38	330
AG 5	66.7	0.49	15.3	1.98	1.49	1.19	2.33	3.51	5.51	0.18	0.1	0.33	0.21	0.02	99.3	3.6	1300	34	18	182	360	32	235
AG 7	67.1	0.49	14.8	2.13	1.28	1.25	2.67	3.41	5.3	0.15	0.07	0.41	0.21	0.23	99.5	3.6	1000	44	18	200	390	34	250
MC 158	68.1	0.48	14.9	1.51	1.31	1.07	2.52	3.43	5.19	0.14	0.05	0.47	0.06	0.08	99.3	3.0	1000	72	20	188	310	32	285
AG 34	68.2	0.37	15.3	2.19	0.74	0.59	2.26	4.19	4.48	0.19	0.02	0.42	0.07	0.13	99.2	3.0	1300	46	10	174	1100	16	164
MC 174	68.7	0.45	14.6	1.78	1.12	1.02	2.17	3.3	5.38	0.12	0.06	0.45	0.08	0.32	99.6	3.0	840	42	22	220	245	38	265
AG 45	69.0	0.44	14.3	2.16	0.78	0.99	1.92	3.3	5.29	0.15	0.06	0.49	0.21	0.2	99.3	3.0	950	64	20	200	265	38	285
AG 37	69.2	0.32	15.1	2.03	0.49	0.85	2.73	3.74	4.42	0.11	0.06	0.15	0.02	0.01	99.2	2.6	390	60	16	235	112	24	80
MC 90	69.7	0.58	15.2	0.94	1.31	0.4	2.2	3.5	5.41	0.13	0.07	0.29	0.19	0.03	100.0	2.4	1000	70	30	240	240	54	470
AG 16	69.9	0.35	14.4	1.09	0.85	0.62	1.39	3.2	6.18	0.06	0.05	0.29	0.25	0.29	98.9	2.0	790	58	24	235	144	40	295
MC 57	69.9	0.22	16	0.83	0.51	0.4	2.34	5	3.82	0.09	0.03	0.19	0.16	0.15	99.6	1.4	1200	30	17	140	920	20	150
MC 185	70.2	0.42	14.6	1.11	1.18	0.67	1.71	3.34	5.6	0.09	0.05	0.25	0.06	0.01	99.3	2.4	1000	56	24	225	210	46	310
MC 34	70.2	0.43	14.7	1.46	0.76	0.51	1.55	3.7	5.2	0.08	0.09	0.29	0.08	0.03	99.1	2.3	790	70	28	270	184	64	405
AG 3	70.4	0.35	14.7	1.13	0.99	0.5	1.11	3.08	6.79	0.07	0.05	0.21	0.03	0.01	99.4	2.2	1000	62	22	260	188	38	235
MC 252	70.8	0.38	14.8	1.29	0.71	0.57	1.3	3.71	5.62	0.08	0.03	0.22	0.08	0.01	99.6	2.1	1200	46	22	270	235	42	305
AG 25	71.0	0.37	14.1	1.1	0.94	0.61	1.38	3.06	6.07	0.06	0.05	0.22	0.27	0.01	99.2	2.1	750	62	22	250	162	40	280
MC 2	71.4	0.33	14.2	1.14	0.89	0.51	1.52	3.38	5.17	0.09	0.03	0.38	0.09	0.11	99.2	2.1	1100	34	27	190	230	33	350
MC 107	71.8	0.34	13.9	1.04	0.52	0.45	1.17	2.98	6.58	0.06	0.02	0.2	0.06	0.04	99.2	1.6	1000	70	22	275	235	52	330
AG 44	71.9	0.35	14.1	1	0.62	0.34	1.25	2.82	6.72	0.05	0.02	0.17	0.03	0.01	99.4	1.7	860	80	22	235	128	42	335
MC 54	72.0	0.04	15.4	0.17	0.3	0.2	1.88	3.1	5.94	0.02	0.23	0.06	0.21	0.06	99.6	0.5	900	30	65	140	510	52	70
MC 145	72.6	14.9	0.8	0.64	0.77	1.83	6.38	0.91	0.37	0.07	0.04	0.14	0.08	0.01	99.5	1.5	118	66	22	82	370	38	295
AG 32	72.8	0.19	13.7	1	0.71	0.63	1.83	2.83	4.91	0.06	0.02	0.57	0.13	0.01	99.4	1.8	680	36	10	152	265	18	120
AG 49	73.0	0.22	13.7	0.94	0.61	0.51	1.92	2.86	4.98	0.05	0.02	0.18	0.12	0.01	99.1	1.6	580	38	18	174	210	36	90
AG 33	73.3	0.18	13.7	0.87	0.54	0.52	1.92	2.83	5.07	0.05	0.02	0.26	0.06	0.06	99.4	1.5	820	62	12	184	245	26	90
MC 35	73.6	0.05	14.4	0.63	0.21	0.16	1.5	4.29	3.8	0.05	0.02	0.16	0.04	0.06	99.0	0.9	220	30	12	170	190	17	66
MC 56	73.8	0.03	14.9	0.14	0.14	0.2	1.31	4.1	5.33	0.03	0.2	0.05	0.02	0.07	99.9	0.3	140	30	97	280	75	60	60
PT 289	74.3	0.24	13.1	0.68	0.47	0.3	1.19	3.2	5.18	0.05	0.02	0.3	0.02	0.15	99.2	1.2	440	55	34	230	120	35	190
PT 295	74.8	0.23	12.8	0.83	0.67	0.35	0.99	3.03	5.16	0.05	0.02	0.2	0.01	0.07	99.2	1.6	600	70	12	180	160	24	190
AG 2	74.9	0.02	14.3	0.38	0.13	0.1	1.28	4.87	3.09	0.05	0.51	0.05	0.01	0.01	99.7	0.5	68	36	22	200	44	88	74
TUK 34	75.8	0.17	12.5	0.71	0.58	0.3	1.01	3.09	4.85	0.05	0.02	0.17	0.01	0.08	99.3	1.4	350	50	19	210	100	32	140
AG 35	76.3	0.13	12.4	0.62	0.37	0.3	0.99	2.75	5.27	0.05	0.02	0.17	0.03	0.01	99.4	1.0	300	54	20	245	114	44	84
AG 40	76.4	0.1	12.5	0.52	0.2	0.21	0.98	2.45	5.92	0.05	0.02	0.1	0.01	0.01	99.5	0.7	500	34	14	225	210	18	84
AG 38	76.9	0.15	12	0.69	0.48	0.33	0.92	2.95	4.79	0.05	0.02	0.14	0.01	0.14	99.6	1.2	365	30	12	240	114	20	92
AG 29	77.0	0.06	12.6	0.46	0.2	0.12	1	2.87	5.23	0.05	0.02	0.08	0.01	0.01	99.7	0.7	126	52	12	196	100	10	46

**DIKE SWARM**

*Mule Mountains*

TM 250	44.3	2.1	13.3	5.5	3.91	3.02	14.4	3.28	0.7	0.57	0.31	2	0.11	6.49	100.0	9.8	260	30	10	52	460	40	270
TUK 1	48.1	2.56	16.6	9.02	6.31	3.86	4.94	4.49	2.32	0.43	0.31	2.5	0.11	1.01	102.6	13.3	370	30	10	138	360	30	195
9DT10	48.2	1.67	17.8	3.33	6.1	5.67	9.36	3.17	0.99	0.32	0.15	2.56	0.22	0.25	99.8	10.1	450	30	<10	24	440	28	194
TM 255	48.5	2.1	16.4	6.8	5.77	4.24	5.07	4.12	2.45	0.39	0.31	2.21	0.17	1.04	99.6	13.2	470	30	<10	134	355	28	186
TM 252	50.8	1.27	17.4	2.01	7.09	6.47	2.78	5.47	1.37	0.5	0.23	3.45	0.15	0.88	99.9	9.9	180	60	10	82	110	28	200
TUK 12	51.3	1.34	17.2	4.3	3.58	5.04	8.17	3.53	1.89	0.49	0.11	1.71	0.26	0.1	99.0	8.3	1200	14	19	42	940	20	180

*Central Trigo Mountains*

TUK 26	69.6	0.48	14.8	1.74	0.61	0.59	1.58	4.47	4.26	0.07	0.03	0.54	0.05	0.22	99.0	2.4	1250	50	28	65	180	48	400
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Analytical methods: major elements—wavelength-dispersive x-ray fluorescence (Taggart et al., 1987); FeO, H<sub>2</sub>O, CO<sub>2</sub> (Jackson et al., 1987); Rb—energy-dispersive x-ray trace elements by energy dispersive x-ray fluorescence (Johnson and King, 1987) or direct-current-arc quantitative emission spectrometry (Golightly et al., 1987)

\* Analytical data from Hayes (1992); only total Fe concentration and LOI reported.

Table DR2. U-Pb thermal ionization mass spectrometry (TIMS) geochronologic data for zircon and sphene from Jurassic volcanic and plutonic rocks, lower Colorado River region, Arizona and California. Sample locations are UTM WGS84.

Mineral	$^{206}\text{Pb}^*$ (ppm)	$^{238}\text{U}$ (ppm)	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}^\dagger$	$^{207}\text{Pb}/^{235}\text{U}^\dagger$	$^{207}\text{Pb}/^{206}\text{Pb}^\dagger$	$^{206}\text{Pb}/^{238}\text{U}$ age	$^{207}\text{Pb}/^{235}\text{U}$ age	$^{207}\text{Pb}/^{206}\text{Pb}$ age
<i>Araz Wash diorite unit</i>									
PT 291: 11S 709224E / 3632967N									
zircon	15.9	672	1053	0.027317	0.19062	0.050611	173.7	177.2	223
	20.2	863	2119	0.027107	0.18693	0.050014	172.4	174	196
	20.4	876	2198	0.026874	0.18536	0.050024	171	172.7	196
TUK 57: 11S 71222E / 3634434N									
zircon	14.6	573	1842	0.029461	0.21711	0.053448	187.2	199.5	348
	14.7	577	1639	0.029415	0.21591	0.053235	186.9	198.5	339
	13.9	551	1560	0.029196	0.21347	0.053029	185.5	196.5	330
	18.2	742	2278	0.028273	0.20675	0.053036	179.7	190.8	330
sphene	8.8	167	198	0.02617	0.17859	0.049493	166.5	166.8	171
TUK 58: 11S 712292E / 3634247N									
zircon	67.8	734	7594	0.106766	0.31085	0.089987	653.9	850.5	1405
	66.7	724	7541	0.106456	1.3248	0.90256	652.1	856.6	1430
	48.3	594	3846	0.093904	1.13645	0.087773	578.6	770.8	1378
	43.9	609	7092	0.083212	0.98535	0.085883	515.3	696.3	1336
<i>Middle Camp porphyritic granodiorite unit</i>									
TUK 73: 11S 725988E / 368672N									
zircon	14.4	635	1235	0.026217	0.18102	0.050078	166.8	168.9	199
	11.3	495	2000	0.026283	0.18213	0.050262	167.2	169.9	207
	13.4	591	1773	0.026141	0.17944	0.049784	166.4	167.6	185
TUK 37: 11S 776810E / 3706329N									
zircon	14.5	642	4348	0.026173	0.18189	0.050403	166.6	169.7	214
	14.6	634	813	0.026585	0.18398	0.050193	169.1	171.5	204
	14.4	640	5760	0.02608	0.17902	0.049782	166	167.2	185
	15.1	671	3968	0.026271	0.18082	0.049918	167.2	168.8	191
TUK 31: 12S 229509E / 3680194N									
zircon	12.5	559	2653	0.02902	0.17863	0.049789	165.6	166.9	185
	11.8	524	2786	0.026021	0.17699	0.049331	165.6	165.5	164
	13	581	2825	0.025835	0.17695	0.049677	164.2	165.4	180
	11.8	534	1536	0.025591	0.17398	0.049309	162.9	162.9	163
	12.3	557	2070	0.025601	0.17475	0.049506	163	163.5	172
TUK 8: 11S 705020E / 3712010N									
zircon	8.6	381	1085	0.026108	0.17914	0.049766	166.1	167.3	186
	4.9	219	774	0.025954	0.17685	0.049385	165.2	165.3	168

	8.8	393	826	0.025964	0.17948	0.050134	165.2	167.6	201
	8.5	378	1176	0.026042	0.17987	0.050095	165.7	168	199
	10.6	473	1333	0.02577	0.17738	0.04992	164	165.8	191
	10.5	471	1637	0.025852	0.18046	0.050628	164.5	168.5	224
	8	357	1330	0.025745	0.17811	0.050176	163.9	166.4	203
	11.7	561	371	0.024094	0.16674	0.050191	153.5	156.6	204
sphene	4.6	209	126	0.025661	0.17352		163.3	162.5	

*Gold Rock Ranch Granite unit*

*TUK19: 11S 697707E / 3705739N*

zircon	35.9	439	6301	0.09429	1.0856	0.083506	580.8	746.4	1281
	40	545	4255	0.08481	0.96838	0.082816	524.7	687.6	1264
	51.4	697	3788	0.08515	0.99201	0.8449	526.8	699.7	1303
	31.3	834	1845	0.04339	0.41711	0.06972	273.8	354	920
	40.4	1792	974	0.026	0.1812	0.05054	165.5	169.1	220
	42.4	1843	1663	0.02655	0.18732	0.051176	168.9	174.3	248
	28.7	1364	4367	0.02429	0.17016	0.0508	154.7	159.6	232
	25.9	1114	272	0.02685	0.18764	0.05069	170.8	174.6	227

*TUK 72: 11S 700729E / 3706166N*

zircon	14.7	593	756	0.02886	0.21693	0.05501	181.8	199.4	413
	13.3	565	943	0.02712	0.19845	0.05307	172.5	183.8	332
	18.3	791	891	0.02674	0.19156	0.05196	170.1	178	283

*TUK 36: 11S 745444E / 3704635N*

zircon	24.6	1134	1242	0.024932	0.16989	0.049422	158.7	159.3	168
	30.6	1421	1238	0.027843	0.16841	0.049166	158.2	158	156

*Dike swarm*

*TUK 26: 11S 724801E / 3688046N*

zircon	3.7	177	832	0.024825	0.16828	0.049159	158.1	157.9	155
	3.6	166	976	0.024881	0.16904	0.049273	158.4	158.6	161

\* Denotes radiogenic  $^{206}\text{Pb}$ . Sample dissolution and ion exchange chemistry modified from Krogh (1973) and Mattinson (1987). U-Pb analyses completed in the U.S. Geological Survey laboratory in Menlo Park prior to 1990.

† Measured ratios are corrected for 0.125% per unit mass fractionation, based on replicate analyses of NBS 981 and 983, for laboratory procedural blank of 0.2 nanograms of Pb, and corrected for common Pb ratios based upon measured feldspar Pb isotopic compositions.

Atomic ratios calculated using the following constants:  $^{238}\text{U}/^{235}\text{U}=137.88$ ;  $^{235}\text{U}=0.98485 \times 10^{-9}\text{yr}^{-1}$ ;  $^{238}\text{U}=0.155125 \times 10^{-9}\text{yr}^{-1}$ .

Table DR3. U-Pb SHRIMP-RG data for volcanic and plutonic rocks from the lower Colorado River region, Arizona and California. Sample locations are in UTM WGS84.

Spot	U, ppm	Th, ppm	<sup>232</sup> Th/ <sup>238</sup> U	Rad 206Pb, ppm	206Pb/ <sup>238</sup> U age	1σ unc.	Total <sup>238</sup> U/ <sup>206</sup> Pb	% unc.	Total <sup>207</sup> Pb/ <sup>206</sup> Pb	% unc.	207Pb/ <sup>235</sup> U	% unc.	206Pb/ <sup>238</sup> U	% unc.	rho
<i>Dome Rock sequence</i>															
TUK 46: 11S 703418E / 3639140N															
1	522	143	0.28	13.2	187.4	1.5	34.01	0.8	0.0474	1.8	0.182	3.0	0.0293	0.8	0.28
2	336	124	0.38	8.5	186.6	1.7	34.13	0.9	0.0481	2.2	0.198	2.7	0.0293	0.9	0.34
3	386	57	0.15	9.5	180.6	1.6	35.11	0.9	0.0518	2.1	0.206	2.3	0.0285	0.9	0.38
4	103	38	0.38	27.9	1772.0	20.9	3.16	1.2	0.1080	1.9	4.667	2.3	0.3159	1.2	0.51
5	267	68	0.26	7.2	196.7	2.5	31.97	1.3	0.0577	3.0	0.242	3.8	0.0312	1.3	0.34
6	562	253	0.46	15.9	209.0	2.0	30.36	1.0	0.0501	2.1	0.228	2.3	0.0329	1.0	0.42
7	192	85	0.46	4.8	184.8	2.4	34.36	1.3	0.0503	3.7	0.194	4.8	0.0290	1.3	0.27
8	329	196	0.62	90.1	1797.9	16.5	3.14	0.9	0.1035	2.1	4.542	2.3	0.3189	0.9	0.39
9	63	41	0.67	1.6	187.1	4.0	33.72	2.1	0.0553	9.3	0.089	65.6	0.0285	2.7	0.04
10	105	59	0.58	29.8	1859.0	23.7	3.03	1.2	0.1031	2.1	4.652	2.5	0.3293	1.2	0.50
11	338	78	0.24	8.3	181.8	3.9	35.00	2.2	0.0489	3.4	0.175	6.2	0.0284	2.2	0.35
12	183	127	0.72	49.8	1801.3	21.8	3.15	1.2	0.0976	2.9	4.186	3.2	0.3164	1.2	0.36
13	1006	46	0.05	26.4	194.0	1.7	32.73	0.9	0.0502	1.9	0.211	2.1	0.0306	0.9	0.41
14	138	127	0.95	3.6	189.3	3.9	33.45	2.1	0.0527	5.5	0.217	5.8	0.0299	2.1	0.35
15	2965	375	0.13	873.6	1933.3	37.5	2.92	1.9	0.1037	0.2	4.899	1.9	0.3429	1.9	0.99
TUK 81: 11S 713127E / 3636259N															
1	224	82	0.38	5.5	180.9	2.0	35.15	1.1	0.0494	3.6	0.190	3.8	0.0284	1.1	0.28
2	255	105	0.43	6.3	183.8	1.8	34.59	0.9	0.0496	3.2	0.190	4.3	0.0288	1.0	0.22
3	284	97	0.35	7.3	189.1	1.7	33.59	0.9	0.0498	3.0	0.200	3.1	0.0298	0.9	0.29
4	637	241	0.39	16.6	192.5	1.2	32.94	0.6	0.0513	2.0	0.210	2.5	0.0303	0.6	0.24
5	281	91	0.33	7.1	188.1	1.8	33.79	0.9	0.0494	3.2	0.200	3.6	0.0296	0.9	0.26
6	215	71	0.34	5.4	184.8	2.0	34.31	1.1	0.0516	5.1	0.210	5.2	0.0291	1.1	0.21
7	80	89	1.15	16.3	1374.1	14.3	4.19	1.1	0.0908	1.5	2.950	1.9	0.2383	1.1	0.55
8	2392	415	0.18	504.0	1414.7	3.1	4.08	0.2	0.0892	0.3	3.010	0.4	0.2453	0.2	0.63
9	128	62	0.50	25.9	1344.0	11.1	4.27	0.8	0.0949	1.4	3.030	1.8	0.2341	0.8	0.47
10	39	11	0.30	0.8	140.4	3.8	44.56	2.7	0.0643	8.2	0.200	8.6	0.0224	2.7	0.31
11	844	102	0.12	152.4	1198.0	5.0	4.76	0.4	0.1020	1.2	2.950	1.2	0.2101	0.4	0.33
12	269	119	0.46	27.4	702.4	4.8	8.45	0.7	0.0848	1.7	1.380	1.9	0.1183	0.7	0.37
13	447	200	0.46	11.3	186.6	1.3	34.01	0.7	0.0509	2.4	0.190	3.9	0.0293	0.7	0.19
14	317	105	0.34	7.9	184.4	1.6	34.35	0.8	0.0525	2.8	0.200	3.3	0.0291	0.9	0.26
15	145	83	0.59	36.7	1662.7	12.9	3.40	0.7	0.1024	2.2	4.160	2.3	0.2944	0.7	0.32
16	276	125	0.47	6.9	186.0	1.7	34.18	0.9	0.0495	3.1	0.200	3.2	0.0293	0.9	0.28
17	283	76	0.28	7.3	190.6	1.6	33.23	0.8	0.0520	2.8	0.210	3.7	0.0300	0.9	0.23
18	286	93	0.34	7.3	189.6	1.6	33.45	0.8	0.0510	2.8	0.220	3.2	0.0299	0.8	0.26
19	286	69	0.25	7.4	191.9	1.6	33.10	0.8	0.0499	2.8	0.220	4.0	0.0303	0.8	0.21
20	293	89	0.31	7.5	188.0	1.5	33.77	0.8	0.0505	2.7	0.200	3.7	0.0295	0.8	0.22
21	174	52	0.31	4.5	190.7	2.0	33.46	1.0	0.0461	4.1	0.210	6.6	0.0301	1.1	0.17
TUK 83: 11S 749750E / 3731896N															
1	426	353	0.86	9.7	168.6	2.0	37.70	1.5	0.0509	3.1	0.183	3.8	0.0265	1.5	0.4
2	497	270	0.56	11.3	169.0	2.0	37.70	1.2	0.0478	3.2	0.172	3.9	0.0265	1.2	0.3
3	598	373	0.64	13.7	169.4	1.0	37.50	0.7	0.0505	2.7	0.186	2.7	0.0267	0.7	0.2
4	720	439	0.63	16.6	170.5	2.0	37.30	1.0	0.0489	2.4	0.180	2.6	0.0268	1.0	0.4
5	706	503	0.74	16.2	170.1	2.0	37.30	1.0	0.0510	2.4	0.194	3.0	0.0268	1.0	0.3
6	902	422	0.48	20.7	170.3	3.0	37.20	1.5	0.0519	2.0	0.184	3.1	0.0268	1.5	0.5
7	764	578	0.78	17.9	173.2	2.0	36.60	1.0	0.0516	2.3	0.189	3.0	0.0273	1.0	0.3
8	475	267	0.58	11.4	178.1	2.0	35.70	1.0	0.0501	3.2	0.194	3.3	0.0280	1.0	0.3
9	823	438	0.55	19.2	172.4	2.0	36.80	1.3	0.0525	2.3	0.199	2.8	0.0272	1.3	0.5
10	668	542	0.84	16.0	177.0	2.0	36.00	1.0	0.0490	2.6	0.192	3.1	0.0278	1.0	0.3
TUK 18: 11S 743988E / 3715065N															
1	302	318	1.09	6.9	169.0	1.0	37.60	0.8	0.0513	4.0	0.183	4.9	0.0265	0.8	0.2
2	452	262	0.60	10.5	172.0	2.0	37.10	1.0	0.0454	3.3	0.169	3.4	0.0270	1.0	0.3
3	755	541	0.74	17.3	170.0	2.0	37.50	1.4	0.0479	2.4	0.174	2.9	0.0266	1.4	0.5
4	333	186	0.58	7.4	165.0	2.0	38.60	1.1	0.0481	3.7	0.172	3.8	0.0259	1.1	0.3
5	513	313	0.63	12.0	173.0	1.0	36.90	0.7	0.0483	2.9	0.181	3.0	0.0271	0.7	0.2
6	419	264	0.65	9.7	171.0	2.0	37.10	1.0	0.0521	3.2	0.190	3.7	0.0269	1.0	0.3
7	615	443	0.74	14.1	170.0	2.0	37.30	0.9	0.0504	2.7	0.186	2.8	0.0268	0.9	0.3
8	523	424	0.84	11.9	168.0	3.0	37.70	1.7	0.0531	2.8	0.194	3.3	0.0265	1.7	0.5
9	605	385	0.66	13.9	170.0	2.0	37.30	1.0	0.0500	2.7	0.182	3.1	0.0268	1.0	0.3



10	546	363	0.69	12.7	172.0	2.0	36.90	1.3	0.0511	2.8	0.168	5.6	0.0269	1.3	0.2
11	370	489	1.36	8.3	167.0	2.0	38.00	1.5	0.0518	3.4	0.192	4.1	0.0263	1.5	0.4
12	352	189	0.56	8.4	176.0	1.0	36.20	0.7	0.0472	3.6	0.180	3.7	0.0277	0.7	0.2

TUK 88: 11S 743943E / 3723386N

1	1821	2855	1.62	41.8	170.3	0.6	37.39	0.4	0.0500	1.3	0.180	1.7	0.0300	0.4	0.22
2	596	500	0.87	14.3	177.4	1.1	35.90	0.6	0.0500	2.1	0.180	2.4	0.0300	0.6	0.26
3	512	334	0.67	11.4	164.7	1.2	38.68	0.7	0.0500	2.5	0.170	2.6	0.0300	0.7	0.28
4	521	347	0.69	11.9	168.4	1.2	37.72	0.7	0.0500	2.3	0.190	2.9	0.0300	0.7	0.24
5	406	311	0.79	9.6	174.7	1.4	36.44	0.8	0.0500	2.7	0.180	3.2	0.0300	0.8	0.25
6	2177	5975	2.84	53.7	182.4	0.6	34.85	0.4	0.0500	1.2	0.190	1.3	0.0300	0.4	0.27
7	395	265	0.69	9.1	170.3	1.4	37.34	0.8	0.0500	2.7	0.180	3.1	0.0300	0.8	0.26
8	580	293	0.52	13.5	171.8	1.2	37.03	0.7	0.0500	2.3	0.190	3.1	0.0300	0.7	0.22
9	437	431	1.02	10.6	179.3	1.4	35.48	0.7	0.0500	2.5	0.190	3.3	0.0300	0.8	0.23
10	197	138	0.72	4.3	159.7	2.0	39.80	1.2	0.0500	4.1	0.160	5.7	0.0300	1.2	0.22
11	314	306	1.00	7.2	168.2	1.5	37.54	0.9	0.0600	2.9	0.160	9.5	0.0300	1.0	0.11
12	429	281	0.68	10.0	172.4	1.3	36.86	0.8	0.0500	2.6	0.190	2.9	0.0300	0.8	0.26
13	82	69	0.87	1.9	167.8	3.0	37.66	1.8	0.0500	5.8	0.170	13.0	0.0300	1.9	0.15
14	493	430	0.90	11.3	170.0	1.3	37.41	0.7	0.0500	2.9	0.180	3.4	0.0300	0.7	0.22
15	292	176	0.62	6.8	172.9	1.6	36.83	0.9	0.0500	3.4	0.170	5.7	0.0300	1.0	0.17
16	577	411	0.74	13.6	173.8	1.2	36.48	0.7	0.0500	2.2	0.190	2.5	0.0300	0.7	0.27
17	395	390	1.02	9.1	170.6	1.4	37.36	0.8	0.0500	2.9	0.180	3.8	0.0300	0.8	0.22
18	319	263	0.85	7.3	169.1	1.5	37.46	0.9	0.0500	3.0	0.180	4.5	0.0300	0.9	0.21
19	506	332	0.68	11.6	168.7	1.2	37.62	0.7	0.0500	2.4	0.190	2.5	0.0300	0.7	0.28
20	566	488	0.89	13.2	171.8	1.2	36.95	0.7	0.0500	2.3	0.190	2.7	0.0300	0.7	0.26

TUK 40: 11S 687330E / 3660014N

1	113	68	0.62	2.6	167.8	2.3	37.73	1.4	0.0504	4.5	0.170	10.1	0.0300	1.4	0.14
2	259	117	0.47	5.4	154.9	1.9	41.04	1.2	0.0506	4.2	0.130	13.6	0.0200	1.3	0.10
3	321	320	1.03	7.2	166.7	1.4	38.10	0.9	0.0524	2.8	0.180	3.0	0.0300	0.9	0.29
4	234	157	0.69	5.4	170.1	1.8	37.32	1.0	0.0497	3.4	0.180	4.2	0.0300	1.0	0.24
5	261	222	0.88	5.9	168.5	1.9	37.80	1.1	0.0499	3.2	0.170	4.8	0.0300	1.1	0.24
6	394	279	0.73	9.0	168.6	1.3	37.67	0.8	0.0510	2.6	0.190	2.7	0.0300	0.8	0.29
7	280	187	0.69	6.0	158.3	1.6	40.20	1.0	0.0538	3.3	0.140	7.7	0.0200	1.0	0.13
8	511	314	0.63	10.9	157.6	1.1	40.25	0.7	0.0487	2.4	0.170	4.4	0.0200	0.7	0.17
9	371	245	0.68	8.1	162.0	1.4	39.27	0.9	0.0508	3.0	0.170	3.9	0.0300	0.9	0.22
10	187	149	0.82	4.3	169.7	1.9	37.48	1.1	0.0496	3.9	0.180	4.0	0.0300	1.1	0.28
11	200	72	0.37	3.9	142.8	1.6	44.56	1.1	0.0513	4.1	0.120	12.2	0.0200	1.2	0.10
12	294	319	1.12	6.8	172.2	1.5	36.97	0.9	0.0489	2.9	0.180	3.1	0.0300	0.9	0.29

KE31: 11S 775197 ? 3656047

1	90	37	0.43	1.9	157.4	2.5	40.29	1.6	0.0524	5.3	0.082	48.4	0.0240	2.1	.043
2	135	60	0.46	3.3	181.8	2.2	34.99	1.2	0.0492	4.1	0.203	4.6	0.0287	1.2	.257
3	1297	642	0.51	33.1	188.4	0.7	33.72	0.4	0.0500	1.3	0.204	1.4	0.0296	0.4	.276
4	666	413	0.64	17.2	191.3	1.0	33.19	0.5	0.0502	1.8	0.200	2.6	0.0301	0.5	.206
5	155	43	0.28	3.9	188.0	2.1	33.75	1.1	0.0510	3.8	0.201	4.5	0.0296	1.1	.250
6	435	180	0.43	10.7	182.5	1.2	34.84	0.7	0.0493	2.3	0.185	3.3	0.0286	0.7	.208
7	3290	1877	0.59	77.2	173.2	0.5	36.62	0.3	0.0516	0.8	0.186	1.4	0.0272	0.3	.211
8	920	290	0.33	23.3	187.2	0.9	33.92	0.5	0.0500	1.6	0.205	1.7	0.0295	0.5	.279
9	1752	787	0.46	45.2	190.9	0.7	33.28	0.3	0.0497	1.2	0.205	1.3	0.0300	0.3	.268
10	1880	737	0.40	48.4	190.3	0.6	33.40	0.3	0.0496	1.1	0.202	1.4	0.0299	0.3	.239
11	268	159	0.61	6.8	186.6	1.7	34.04	0.9	0.0500	3.0	0.224	5.4	0.0296	0.9	.174
12	717	48	0.07	121.2	1145.0	4.3	5.08	0.4	0.0877	0.6	2.381	0.7	0.1968	0.4	.574

Araz Wash diorite unit

PT 291: 11S 709224E / 3632967N

1	357	216	0.62	8.1	169.0	1.5	37.63	0.9	0.0499	2.3	0.188	2.78	0.0266	0.91	0.33
2	318	351	1.14	7.3	170.4	1.6	37.36	0.9	0.0489	2.3	0.191	3.66	0.0269	0.93	0.25
3	592	434	0.76	14.1	175.3	1.4	36.21	0.8	0.0511	1.7	0.190	2.25	0.0276	0.81	0.36
4	257	207	0.83	6.5	186.8	3.2	34.01	1.7	0.0499	5.4	0.159	14.67	0.0290	1.82	0.12
5	289	172	0.61	7.4	188.5	2.8	33.58	1.5	0.0525	4.3	0.150	18.40	0.0292	1.64	0.09
6	184	141	0.79	4.9	196.6	3.4	32.26	1.7	0.0508	5.3	0.189	11.31	0.0308	1.78	0.16
7	296	181	0.63	8.5	178.9	3.7	29.83	1.3	0.1804	6.2	0.355	23.79	0.0295	2.44	0.10
8	626	568	0.94	14.6	172.6	1.9	36.84	1.1	0.0498	2.7	0.180	3.66	0.0271	1.10	0.30
9	299	263	0.91	7.1	175.2	2.4	36.21	1.4	0.0518	3.6	0.187	4.82	0.0275	1.39	0.29
10	414	279	0.70	9.8	175.9	4.5	36.21	2.5	0.0483	3.6	0.174	5.21	0.0275	2.55	0.49
11	382	234	0.63	9.5	183.5	2.2	34.64	1.2	0.0497	2.9	0.193	3.55	0.0288	1.18	0.33
12	291	285	1.01	7.0	178.9	2.1	35.55	1.2	0.0494	3.3	0.179	5.56	0.0280	1.17	0.21

## TUK 57: 11S 712222E / 3634434N

1	249	139	0.58	5.9	174.1	1.7	36.44	1.0	0.0515	3.1	0.190	3.70	0.0274	0.95	0.26
2	764	701	0.95	17.0	164.3	0.9	38.71	0.6	0.0503	1.9	0.175	2.28	0.0258	0.57	0.25
3	315	62	0.20	6.9	161.1	1.5	39.49	0.9	0.0497	5.3	0.165	5.98	0.0253	0.90	0.15
4	643	85	0.14	14.9	171.6	1.1	37.02	0.7	0.0506	2.1	0.186	2.41	0.0270	0.65	0.27
5	1987	1114	0.58	49.1	182.7	0.6	34.77	0.4	0.0500	1.2	0.198	1.22	0.0288	0.35	0.29
6	697	610	0.90	16.7	178.2	1.0	35.76	0.6	0.0478	2.0	0.184	2.04	0.0280	0.58	0.28
7	841	251	0.31	19.4	170.5	0.9	37.32	0.5	0.0491	1.8	0.180	1.92	0.0268	0.53	0.27
8	2104	1237	0.61	51.4	180.4	0.7	35.20	0.4	0.0503	1.2	0.196	1.30	0.0284	0.37	0.28
9	286	185	0.67	7.0	180.9	1.5	35.06	0.9	0.0513	2.8	0.202	2.90	0.0285	0.85	0.29
10	264	136	0.53	6.5	181.8	1.7	34.88	0.9	0.0517	3.0	0.180	9.47	0.0285	1.02	0.11
11	234	132	0.58	5.5	173.3	1.7	36.68	1.0	0.0502	3.3	0.177	5.60	0.0272	1.02	0.18
12	1475	92	0.06	35.3	176.9	0.7	35.92	0.4	0.0500	1.3	0.191	1.42	0.0278	0.39	0.28
13	1115	158	0.15	28.1	186.7	0.8	34.05	0.4	0.0494	1.5	0.191	2.30	0.0293	0.45	0.19
14	1223	160	0.13	344.4	1789.5	4.8	3.05	0.3	0.1293	0.3	5.841	0.41	0.3279	0.26	0.65
15	249	135	0.56	5.8	171.6	1.9	37.09	1.1	0.0489	3.9	0.177	4.66	0.0269	1.09	0.23

## TUK 58: 11S 712290 / 3634247N

1	1306	574	0.45	30.7	174.3	0.8	36.50	0.4	.04954	1.3	0.186	1.4	0.0274	0.4	0.3
2	178	88	0.51	42.2	1565.7	9.1	3.62	0.6	.10209	0.8	3.871	1.0	0.2764	0.6	0.6
3	197	50	0.26	54.5	1801.2	11.6	3.10	0.7	.11142	0.8	4.947	1.0	0.3227	0.7	0.6
4	123	155	1.30	25.1	1371.7	10.0	4.21	0.7	.08809	1.1	2.882	1.3	0.2373	0.7	0.6
5	765	228	0.31	18.4	178.1	0.9	35.77	0.5	.04819	1.8	0.183	2.1	0.0279	0.5	0.2
6	361	145	0.41	8.6	175.7	1.2	36.14	0.7	.05059	2.4	0.189	2.7	0.0276	0.7	0.3
7	308	87	0.29	7.2	172.4	1.4	36.83	0.8	.05087	2.7	0.180	3.9	0.0271	0.8	0.2
8	726	238	0.34	176.2	1601.0	5.3	3.54	0.3	.10033	0.4	3.898	0.5	0.2824	0.3	0.7
9	278	83	0.31	7.7	203.5	1.4	30.91	0.7	.05707	2.3	0.158	17.2	0.0315	1.0	0.1
10	404	156	0.40	9.7	177.0	1.0	35.84	0.6	.05148	2.0	0.196	2.2	0.0279	0.6	0.3

## TUK 87: 11S 743682E / 3731258N

1	1933	3432	1.83	42.7	163.8	0.6	38.87	0.4	0.0491	1.2	0.171	1.43	0.0257	0.35	0.25
2	2108	11918	5.84	63.2	220.2	0.8	28.66	0.3	0.0541	0.9	0.250	1.84	0.0348	0.36	0.20
3	1459	2144	1.52	34.3	174.1	0.7	36.58	0.4	0.0486	1.3	0.180	1.58	0.0273	0.39	0.25
4	1968	3577	1.88	47.4	178.2	0.6	35.68	0.4	0.0495	1.2	0.189	1.45	0.0280	0.35	0.24
5	1931	3542	1.89	44.4	170.1	0.6	37.38	0.4	0.0497	1.2	0.179	1.57	0.0267	0.36	0.23
6	513	357	0.72	12.3	177.0	1.2	35.99	0.7	0.0480	2.4	0.174	3.51	0.0277	0.70	0.20
7	1162	280	0.25	25.2	160.5	0.7	39.57	0.5	0.0511	1.5	0.177	1.67	0.0253	0.45	0.27
8	1845	917	0.51	41.9	167.7	0.7	37.84	0.4	0.0517	1.3	0.178	2.03	0.0263	0.39	0.19
9	1646	128	0.08	38.0	171.0	0.7	37.22	0.4	0.0491	1.4	0.181	1.43	0.0269	0.39	0.27
10	2696	840	0.32	57.2	157.1	0.5	40.53	0.3	0.0493	1.0	0.167	1.14	0.0247	0.29	0.26
11	487	472	1.00	11.0	167.1	1.2	38.08	0.7	0.0493	3.1	0.178	3.20	0.0263	0.73	0.23
12	1978	4812	2.51	47.3	176.7	0.7	35.97	0.4	0.0498	1.3	0.188	1.47	0.0278	0.38	0.26
13	1662	4763	2.96	38.5	171.6	0.7	37.06	0.4	0.0497	1.4	0.181	1.73	0.0269	0.40	0.23
14	2368	4556	1.99	54.1	169.2	0.7	37.59	0.4	0.0496	1.2	0.180	1.30	0.0266	0.39	0.30
15	1821	3409	1.93	41.9	169.4	1.0	37.34	0.4	0.0543	6.6	0.186	9.58	0.0267	0.57	0.06
16	2094	3418	1.69	49.3	173.5	0.7	36.46	0.4	0.0539	3.4	0.097	66.39	0.0265	2.11	0.03
17	1923	225	0.12	44.7	172.2	0.7	36.95	0.4	0.0491	1.3	0.179	1.55	0.0270	0.43	0.28
18	1711	618	0.37	42.3	182.7	0.7	34.77	0.4	0.0502	1.4	0.197	1.48	0.0287	0.40	0.27
19	963	1061	1.14	22.1	170.0	0.9	37.44	0.5	0.0491	1.8	0.178	2.05	0.0267	0.52	0.25
20	2061	325	0.16	46.6	167.3	0.6	38.00	0.4	0.0500	1.3	0.180	1.44	0.0263	0.37	0.26

## Middle Camp porphyritic granodiorite unit

## TUK 42: 11S 688565E / 3660194N

1	358	191	0.55	8.2	168.9	1.4	37.63	0.8	0.0502	2.7	0.176	3.73	0.0265	0.81	0.22
2	145	105	0.75	3.1	159.2	2.1	40.04	1.3	0.0485	4.4	0.151	8.43	0.0249	1.33	0.16
3	488	338	0.72	11.0	166.1	1.2	38.28	0.7	0.0500	2.3	0.173	3.25	0.0261	0.70	0.22
4	221	164	0.77	5.1	169.5	1.8	37.46	1.0	0.0511	3.4	0.182	4.25	0.0266	1.04	0.24
5	309	218	0.73	7.1	169.4	1.5	37.54	0.9	0.0497	2.9	0.183	3.06	0.0266	0.87	0.29
6	347	362	1.08	7.7	163.6	1.4	38.83	0.8	0.0509	2.8	0.181	2.93	0.0258	0.84	0.29
7	520	302	0.60	11.7	166.3	1.1	38.30	0.7	0.0487	2.3	0.169	3.03	0.0261	0.68	0.23
8	872	403	0.48	19.9	168.4	0.9	37.69	0.5	0.0515	1.7	0.184	2.13	0.0265	0.52	0.25
9	595	487	0.85	13.3	164.9	1.2	38.56	0.7	0.0502	2.1	0.174	2.76	0.0259	0.73	0.27
10	246	121	0.51	5.3	160.1	1.9	39.66	1.2	0.0516	3.4	0.180	3.62	0.0252	1.19	0.33

## TUK 86: 11S 743682E / 3731288N

1	195	149	0.79	4.1	156.1	1.8	40.74	1.1	0.0505	3.8	0.171	3.97	0.0245	1.12	0.28
2	123	162	1.37	2.6	157.6	2.3	40.30	1.5	0.0515	5.0	0.166	6.70	0.0247	1.47	0.22
3	708	469	0.68	15.2	159.0	0.9	40.09	0.6	0.0484	2.7	0.166	2.76	0.0249	0.58	0.21
4	400	397	1.02	8.7	161.7	1.3	39.44	0.8	0.0477	2.7	0.159	3.68	0.0253	0.78	0.21

5	131	132	1.04	2.9	164.5	2.3	38.65	1.4	0.0500	4.9	0.124	18.60	0.0254	1.59	0.09
6	298	365	1.27	6.6	163.7	1.6	38.92	1.0	0.0482	3.3	0.163	4.22	0.0256	0.96	0.23
7	83	95	1.17	1.8	157.8	3.0	40.47	1.9	0.0467	6.8	0.112	20.36	0.0243	2.02	0.10
8	137	112	0.85	3.2	173.0	2.4	36.91	1.4	0.0465	4.9	0.212	10.18	0.0274	1.51	0.15
9	163	162	1.03	3.5	160.5	2.1	39.47	1.3	0.0532	4.2	0.178	5.24	0.0253	1.28	0.24
10	153	180	1.21	3.4	162.0	2.2	39.13	1.3	0.0530	6.3	0.187	6.48	0.0256	1.33	0.21
11	2675	1903	0.73	63.1	174.0	1.7	36.43	1.0	0.0522	2.5	0.193	2.84	0.0274	1.00	0.35
12	566	397	0.72	12.9	169.1	1.1	37.63	0.7	0.0493	2.3	0.181	2.35	0.0266	0.66	0.28
13	489	772	1.63	10.7	162.4	1.4	39.30	0.8	0.0473	2.5	0.162	2.95	0.0254	0.84	0.29
14	273	520	1.97	6.2	169.2	1.6	37.75	1.0	0.0463	3.4	0.169	3.53	0.0265	0.96	0.27
15	663	592	0.92	14.8	165.6	1.0	38.42	0.6	0.0497	2.1	0.167	3.26	0.0259	0.63	0.20
16	210	277	1.36	4.8	167.9	1.8	37.85	1.1	0.0504	3.7	0.196	5.42	0.0265	1.11	0.21
17	850	1209	1.47	19.4	169.3	0.9	37.60	0.6	0.0491	1.9	0.177	2.11	0.0266	0.56	0.26
18	407	391	0.99	9.0	163.1	1.3	38.90	0.8	0.0517	2.7	0.177	3.35	0.0257	0.81	0.24
19	113	81	0.74	2.6	170.3	2.7	37.40	1.5	0.0484	7.7	0.153	12.08	0.0265	1.56	0.13
20	443	449	1.05	9.8	164.1	1.3	38.74	0.8	0.0502	2.6	0.174	3.48	0.0258	0.78	0.22

TM650: 11S 746643E / 3702159N

1	346	202	0.60	7.2	153.8	1.4	41.49	0.9	.0475	3.1	0.149	4.5	0.0240	0.9	.196
2	495	389	0.81	10.5	156.9	1.2	40.63	0.7	.0481	2.6	0.176	3.4	0.0252	0.8	.242
3	147	84	0.59	3.4	168.1	2.3	37.78	1.4	.0532	4.6	0.181	3.5	0.0266	1.0	.279
4	518	342	0.68	11.1	158.3	1.2	40.14	0.7	.0508	2.5	0.159	3.3	0.0248	0.8	.229
5	608	481	0.82	13.7	166.3	1.1	38.19	0.7	.0482	2.3	0.170	2.8	0.0252	0.8	.278
6	300	140	0.48	6.4	158.3	1.7	40.02	1.0	.0521	3.5	0.164	4.0	0.0258	0.8	.201
7	171	80	0.48	3.9	170.0	2.2	37.30	1.3	.0489	4.3	0.175	3.8	0.0263	0.8	.198
8	1547	2241	1.50	36.5	174.7	0.8	36.39	0.5	.0490	1.4	0.183	2.5	0.0266	0.7	.280
9	568	395	0.72	12.7	165.7	1.2	38.39	0.7	.0497	4.1	0.198	4.7	0.0262	0.9	.182
10	454	378	0.86	9.8	160.1	1.3	39.78	0.8	.0501	2.9	0.181	2.4	0.0268	0.7	.278
11	275	385	1.45	6.3	169.6	1.7	37.53	1.0	.0486	3.4	0.174	3.0	0.0250	0.7	.240
12	546	367	0.69	11.7	158.4	1.2	40.25	0.8	.0496	2.7	0.155	3.7	0.0245	0.7	.200
13	475	307	0.67	10.3	160.3	1.3	39.72	0.8	.0587	2.7	0.170	3.4	0.0257	0.7	.210
14	480	310	0.67	10.7	165.1	1.3	38.58	0.8	.0509	2.7	0.177	2.8	0.0266	0.7	.247
15	469	281	0.62	10.6	167.8	1.3	37.94	0.8	.0491	3.6	0.175	3.7	0.0256	1.0	.276
16	508	342	0.70	11.6	168.9	1.2	37.65	0.7	.0508	2.4	0.177	5.9	0.0264	1.4	.231
17	412	273	0.68	9.3	166.0	1.4	37.91	0.8	.0499	2.6	0.175	2.6	0.0249	0.7	.280
18	614	451	0.76	14.1	170.5	1.1	37.34	0.7	.0494	2.3	0.179	2.7	0.0262	0.7	.252
19	507	367	0.75	10.9	159.3	1.2	39.84	0.7	.0492	2.4	0.169	6.2	0.0249	1.1	.172
20	525	384	0.76	11.6	163.9	1.2	38.80	0.7	.0522	2.4	0.185	5.4	0.0267	1.3	.240
21	533	405	0.79	12.2	169.4	1.2	37.55	0.7	.0488	2.3	0.189	1.4	0.0275	0.5	.326
22	265	180	0.70	5.8	162.8	1.7	39.08	1.0	.0499	3.6	0.173	4.5	0.0260	0.7	.154

TUK 8: 11S 705020E / 3712010N

1	297	187	0.65	6.6	165.2	1.3	38.52	0.8	0.0495	2.9	0.189	2.8	0.0261	0.8	0.272
2	260	495	1.97	5.6	160.5	1.4	39.60	0.8	0.0505	3.0	0.161	3.4	0.0251	0.8	0.242
3	358	263	0.76	7.9	164.0	1.2	38.83	0.7	0.0487	2.6	0.169	2.8	0.0257	0.7	0.253
4	274	223	0.84	5.9	160.4	1.3	39.70	0.8	0.0490	2.9	0.175	2.9	0.0252	0.8	0.272
5	337	348	1.07	7.5	164.5	1.3	38.69	0.7	0.0492	2.7	0.185	2.7	0.0259	0.7	0.277
6	213	164	0.80	4.8	166.7	1.6	38.18	0.9	0.0492	3.5	0.200	7.0	0.0264	1	0.148
7	70	88	1.29	1.6	167.4	2.8	37.74	1.6	0.0552	5.6	0.155	10.5	0.0261	1.7	0.16
8	377	293	0.80	8.4	165.1	1.2	38.49	0.7	0.0505	2.5	0.180	2.6	0.0260	0.7	0.269
9	328	575	1.81	7.2	161.7	1.2	39.17	0.7	0.0531	2.6	0.196	2.6	0.0256	0.7	0.285
10	385	463	1.24	8.6	165.0	1.1	38.58	0.7	0.0492	2.5	0.178	2.5	0.0259	0.7	0.268
11	276	338	1.27	6.1	164.0	1.3	38.75	0.8	0.0503	2.9	0.187	2.9	0.0259	0.8	0.278
12	213	261	1.27	4.8	167.6	1.6	37.90	0.9	0.0507	3.3	0.174	3.9	0.0263	0.9	0.242

KE12: 11S 772811 / 365768S

KE12-1	884	690	0.81	19.6	164.4	0.8	38.67	0.5	0.0496	1.6	0.173	2.0	0.0258	0.5	.231
KE12-2	470	190	0.42	10.6	167.3	1.1	37.95	0.6	0.0485	2.2	0.169	3.0	0.0263	0.6	.215
KE12-3	582	363	0.65	13.3	169.1	1.0	37.45	0.6	0.0485	2.0	0.165	4.0	0.0266	0.6	.149
KE12-4	534	458	0.89	11.9	165.3	1.0	38.56	0.6	0.0491	2.3	0.181	2.7	0.0260	0.6	.221
KE12-5	611	552	0.93	13.9	168.3	0.9	37.77	0.6	0.0501	2.0	0.180	2.2	0.0265	0.6	.255
KE12-6	929	1421	1.58	20.3	161.8	0.8	39.38	0.5	0.0509	1.6	0.181	1.8	0.0254	0.5	.259
KE12-7	733	753	1.06	17.8	180.0	1.1	35.36	0.6	0.0492	1.8	0.196	2.1	0.0283	0.6	.290
KE12-8	145	115	0.82	3.4	175.7	2.1	36.46	1.2	0.0494	4.2	0.210	6.5	0.0276	1.2	.185
KE12-9	464	521	1.16	10.7	171.6	1.2	37.21	0.7	0.0491	2.4	0.194	3.7	0.0270	0.7	.188
KE12-10	188	201	1.11	4.4	170.9	1.9	36.62	1.0	0.0523	3.7	0.144	12.2	0.0269	1.2	.095
KE12-11	159	140	0.91	3.4	157.8	1.8	40.59	1.2	0.0503	4.1	0.187	5.6	0.0248	1.2	.210

Gold Rock Ranch granite unit

TUK 34: 11S 703139E / 3642491N

1	399	293	0.76	8.8	162.5	1.4	39.13	0.9	0.0501	2.1	0.170	2.88	0.0255	0.88	0.31
2	265	270	1.05	6.0	161.8	1.7	37.81	1.0	0.0813	4.1	0.136	25.41	0.0251	1.49	0.06
3	3939	623	0.16	92.6	174.0	1.1	36.54	0.7	0.0499	0.7	0.188	0.95	0.0274	0.66	0.70
4	341	161	0.49	6.6	142.1	1.5	44.69	1.0	0.0523	2.4	0.136	6.93	0.0222	1.07	0.15
5	781	449	0.59	17.4	165.3	1.3	38.51	0.8	0.0490	1.7	0.173	2.04	0.0259	0.79	0.39
6	532	382	0.74	11.9	165.4	1.4	38.47	0.8	0.0497	2.0	0.172	2.69	0.0259	0.85	0.32
7	606	648	1.10	13.9	168.4	1.5	37.46	0.9	0.0563	1.7	0.177	4.55	0.0264	0.91	0.20
8	327	147	0.46	5.5	123.8	1.6	51.18	1.2	0.0547	3.6	0.142	5.05	0.0195	1.25	0.25
9	475	274	0.60	10.5	164.2	1.5	38.79	0.9	0.0488	2.0	0.169	2.52	0.0257	0.92	0.37
10	377	181	0.50	8.6	168.7	1.6	37.73	1.0	0.0492	2.2	0.173	3.04	0.0264	0.97	0.32
11	460	439	0.99	11.0	176.3	3.8	35.91	2.2	0.0534	6.7	0.178	12.36	0.0276	2.22	0.18
12	895	958	1.11	19.9	163.5	2.6	38.69	1.6	0.0542	4.0	0.176	7.60	0.0257	1.60	0.21
13	328	182	0.57	7.1	161.0	2.8	39.41	1.7	0.0520	5.4	0.182	5.66	0.0254	1.74	0.31

TUK 44: 11S 730023E / 3697125N

1	1491	2111	1.46	32.8	163.0	2.0	39.10	1.2	0.0487	1.8	0.171	2.2	0.0256	1.2	0.5
3	656	621	0.98	14.2	160.0	1.0	39.80	0.8	0.0483	2.8	0.165	3.3	0.0251	0.8	0.2
4	318	520	1.69	6.9	162.0	2.0	39.10	1.1	0.0538	3.7	0.181	5.2	0.0255	1.1	0.2
5	491	363	0.76	72.9	1029.0	7.0	5.70	0.7	0.0882	0.9	2.140	1.1	0.1761	0.7	0.6
6	499	132	0.27	130.3	1711.0	19.0	3.30	1.2	0.1060	0.6	4.451	1.3	0.3044	1.2	0.9
7	558	191	0.35	113.5	1369.0	29.0	4.20	2.2	0.0891	0.7	2.909	2.3	0.2371	2.2	1.0
8	746	266	0.37	17.1	170.0	1.0	37.40	0.8	0.0500	2.5	0.182	2.8	0.0267	0.8	0.3
9	627	464	0.76	14.1	166.0	2.0	38.30	0.9	0.0475	2.7	0.169	3.2	0.0261	0.9	0.3
10	493	630	1.32	11.0	166.0	2.0	38.40	1.1	0.0495	3.0	0.175	3.6	0.0260	1.1	0.3
11	332	254	0.79	7.3	163.0	2.0	39.00	1.1	0.0522	3.6	0.185	3.8	0.0256	1.1	0.3
12	501	204	0.42	104.7	1403.0	13.0	4.10	1.0	0.0896	0.7	3.009	1.2	0.2434	1.0	0.8

TUK 19: 11S 697707E / 3705739

1	318	467	1.52	56.0	1201.9	9.6	4.88	0.8	0.0798	0.7	2.250	1.1	0.2000	0.8	0.7
2	78	71	0.94	12.1	1069.2	12.9	5.51	1.2	0.0797	2.0	1.890	2.9	0.1800	1.3	0.4
3	226	91	0.41	57.7	1672.4	14.4	3.37	0.9	0.1040	1.0	4.240	1.4	0.3000	0.9	0.7
4	887	220	0.26	26.6	221.0	1.8	28.63	0.8	0.0517	1.3	0.240	1.8	0.0300	0.8	0.5
5	1056	372	0.36	23.8	167.2	1.4	38.07	0.8	0.0493	1.5	0.170	2.4	0.0300	0.8	0.4
6	792	192	0.25	212.9	1754.3	12.7	3.20	0.7	0.1078	1.0	4.640	1.2	0.3100	0.7	0.6
7	216	119	0.57	61.8	1860.0	17.9	3.01	0.9	0.1083	2.3	4.970	2.5	0.3300	0.9	0.4
8	300	103	0.35	59.1	1328.4	11.4	4.35	0.9	0.0890	0.7	2.820	1.1	0.2300	0.9	0.8
9	408	192	0.49	91.8	1510.5	13.8	3.82	0.9	0.0874	2.2	3.150	2.4	0.2600	0.9	0.4
10	2489	1792	0.74	61.9	169.1	1.6	34.57	0.7	0.1144	0.9	0.180	11.8	0.0300	0.9	0.1
11	299	113	0.39	63.0	1413.4	11.6	4.08	0.9	0.0891	0.7	3.000	1.1	0.2400	0.9	0.8
12	1768	1031	0.60	42.0	175.4	1.3	36.13	0.8	0.0523	1.3	0.200	1.5	0.0300	0.8	0.5
13	691	110	0.16	15.6	166.7	1.5	38.13	0.9	0.0505	1.8	0.180	2.2	0.0300	0.9	0.4
14	313	175	0.58	67.0	1435.2	11.8	4.01	0.9	0.0896	0.7	3.060	1.1	0.2500	0.9	0.8
15	286	108	0.39	6.3	162.7	1.9	39.14	1.2	0.0492	2.8	0.200	2.8	0.0300	1.2	0.4
16	1054	197	0.19	23.3	163.4	1.4	38.95	0.8	0.0493	1.4	0.170	2.2	0.0300	0.8	0.4
17	56	46	0.84	9.7	1181.0	15.6	4.97	1.4	0.0800	1.8	2.180	2.3	0.2000	1.4	0.6
18	820	190	0.24	18.2	162.5	1.4	38.82	0.9	0.0562	2.0	0.180	4.1	0.0300	0.9	0.2

1. Data reduction for geochronology follows the methods described by Williams (1996), and Ireland and Williams (2003), and uses the MS Excel add-in Squid and Isoplot programs of Ludwig (2001, 2008) using R33 (419 Ma) and Temora (416.8 Ma) standards as a references (Black et al., 2004).

Table DR4. Trace element geochemistry of zircon from Jurassic volcanic and plutonic rocks in the lower Colorado River region, Arizona and California

Zircon	Y, ppm	La, ppm	Ce, ppm	Nd, ppm	Sm, ppm	Eu, ppm	Gd, ppm	Dy, ppm	Er, ppm	Yb, ppm	Hf, ppm	Th, ppm	U, ppm	Hf, ppm
<i>Dome Rock sequence</i>														
TUK 40														
1	579	0.02	10	0.76	1.5	0.97	12.9	57	113	217	6849	79	121	6849
2	546	0.84	27	0.71	1.46	0.32	11.2	46	96	193	7021	131	248	7021
3	2145	0.03	44	3.37	7.06	2.15	54.8	220	394	685	9458	372	342	9458
4	997	0.02	31	0.86	2.18	0.8	19.7	89	191	387	9909	182	247	9909
5	954	0.01	37	1.2	2.61	0.96	22.2	91	179	346	9274	258	278	9274
6	1899	0.2	42	2.86	6.13	2.39	50.7	197	361	651	9011	326	419	9011
7	772	0.01	36	0.62	1.76	0.47	15.9	73	148	290	10208	218	298	10208
8	628	0.11	33	0.5	1.24	0.22	12.2	54	115	225	10666	364	534	10666
9	843	0.44	31	1.21	2.58	0.79	21.2	83	155	277	7568	284	383	7568
10	581	0.01	22	0.65	1.47	0.6	11.9	53	109	228	8488	172	195	8488
11	379	1.72	20	0.69	1.09	0.34	8.7	32	67	131	5490	86	198	5490
12	1168	0.01	46	1.31	3.26	0.9	27.1	118	220	391	9526	374	320	9526
TUK 46														
1	1002	0.01	26	0.29	1.04	0.7	12.2	67	183	490	10575	150	531	10575
2	314	0.01	16	0.13	0.31	0.22	3.5	21	60	185	10555	126	332	10555
3	273	0.14	7	0.07	0.16	0.14	2.1	17	56	214	12222	59	388	12222
4	603	0.01	8	0.34	1.07	0.16	11.6	57	114	211	11153	39	104	11153
5	1166	0	18	0.29	1.05	0.97	14	90	229	527	9079	70	262	9079
6	612	0.01	33	0.23	0.56	0.5	6.9	39	119	355	10357	267	576	10357
7	622	0.02	14	0.44	1.11	0.55	11.1	50	120	282	9532	88	194	9532
8	1784	0.04	12	1.61	4.33	0.61	39.7	167	313	518	9952	203	329	9952
9	700	0.01	15	1.21	2.51	1.71	19.4	67	119	227	8732	40	59	8732
10	658	0.01	13	0.69	2.03	0.23	16.2	68	123	207	10173	60	103	10173
11	252	0.01	11	0.05	0.26	0.16	2.8	16	48	150	12811	80	330	12811
12	1231	0.02	15	1.16	3.26	0.3	31.7	125	221	366	11283	132	185	11283
13	628	0	15	0.13	0.63	0.5	8.3	50	124	336	14089	49	1041	14089
14	2022	0.02	46	1.77	4.27	3.37	47.7	202	376	673	8548	134	142	8548
15	1920	0.11	18	0.33	1.08	0.14	15.4	120	405	1281	18604	401	3103	18604
TUK 81														
1	253	0.01	17	0.13	0.29	0.23	3.4	16	50	153	11308	83	223	11308
2	380	0.04	23	0.16	0.31	0.3	4.3	24	74	230	11071	109	257	11071
3	481	0.01	24	0.13	0.46	0.34	4.9	27	95	303	10634	99	282	10634
4	667	0.01	33	0.15	0.33	0.31	5.4	34	126	448	13793	246	632	13793
5	506	0.01	24	0.19	0.38	0.33	5.4	32	102	329	11337	95	285	11337
6	343	0.03	18	0.12	0.28	0.2	3.2	20	69	228	11709	73	217	11709
7	332	0.01	28	0.5	1.12	0.39	7.3	30	60	125	10950	91	80	10950
8	1321	0.07	22	0.52	1.62	0.31	19.5	114	250	493	12551	433	2450	12551
9	584	0.04	21	0.95	1.42	0.46	12.6	55	109	211	10041	60	132	10041
10	349	0.03	3	0.07	0.17	0.22	3.4	25	76	196	10532	13	42	10532
11	325	0.02	4	0.47	1.84	0.15	12.7	36	53	106	14132	98	815	14132
12	627	0.02	20	0.18	0.77	0.74	10.2	49	119	277	10028	128	271	10028
13	827	0.01	42	0.31	0.72	0.54	8.9	52	158	472	10424	204	450	10424
14	500	0.02	24	0.15	0.51	0.36	5.5	31	101	323	11472	109	322	11472
15	963	0.02	13	1.07	2.81	0.34	25	99	176	297	10327	88	150	10327
16	382	0.04	22	0.17	0.36	0.31	4.7	26	75	225	10822	131	274	10822
17	512	0.01	20	0.14	0.33	0.32	4.8	29	101	328	10864	79	283	10864
18	497	0.02	21	0.19	0.5	0.37	5.3	31	97	297	11129	91	280	11129
19	402	0.03	19	0.14	0.31	0.3	4.1	25	78	248	12254	75	293	12254
20	519	0.02	22	0.12	0.37	0.34	4.9	30	102	335	11509	94	299	11509
21	477	0.01	17	0.1	0.37	0.36	4.7	29	93	274	10472	54	176	10472

## TUK 83

1	1300	0.017	41	1.12	2.7	0.65	25.4	120	248	478	10085	353	426	10085
2	630	0.006	29	0.24	0.83	0.21	8.7	51	122	266	11382	270	497	11382
3	1015	0.012	55	0.66	1.74	0.32	16.6	86	199	413	11149	373	598	11149
4	1098	0.009	46	0.72	1.99	0.39	17.9	98	219	448	11139	439	720	11139
5	1089	0.008	58	0.63	1.95	0.43	17.6	97	214	450	10886	503	706	10886
6	1261	0.589	55	0.96	1.67	0.36	15.5	99	256	649	12164	422	902	12164
7	1617	0.053	68	1.05	2.46	0.62	28.9	140	313	612	11651	578	764	11651
8	1036	0.189	46	0.57	1.43	0.31	14.8	92	200	427	10531	267	475	10531
9	928	0	38	0.51	1.25	0.23	14.8	86	180	369	11613	438	823	11613
10	1885	0.022	47	2.46	4.74	1.02	38.5	180	356	686	10618	542	668	10618

## TUK 18

2	840	0.061	43	0.44	1.11	0.28	12.3	72	167	358	10391	262	452	10391
3	1071	0	65	0.7	1.55	0.4	14.7	82	212	480	10697	541	755	10697
4	739	0.011	37	0.35	0.9	0.23	11.4	63	153	325	11161	186	333	11161
5	1004	0.009	38	0.81	1.79	0.4	19	84	202	419	10595	313	513	10595
6	981	0.003	48	0.5	1.42	0.4	15.1	78	190	433	9963	264	419	9963
7	1008	0	52	0.85	1.95	0.49	17.1	91	193	400	10683	443	615	10683
8	1528	0.006	50	1.22	3.43	0.8	31.9	139	298	571	10725	424	523	10725
9	1005	0.021	47	0.63	1.61	0.38	17.1	89	191	403	11093	385	605	11093
10	1048	0.056	42	1.06	1.69	0.44	18.4	94	205	422	10437	363	546	10437
11	1860	0.012	67	3.7	6.35	2.71	50	201	350	635	10220	489	370	10220
12	759	0.015	33	0.3	0.97	0.32	10.1	66	150	325	10180	189	352	10180

## TUK 88

1	5143	0.07	301	3.4	9.85	3.5	99.4	453	954	1858	8473	2863	1812	8473
2	908	0.01	59	0.59	1.55	0.55	14.3	72	172	396	11645	508	594	11645
3	891	0.02	46	0.51	1.71	0.43	17.7	83	179	366	12155	351	523	12155
4	953	0.01	44	0.64	1.83	0.43	17.4	84	181	374	11477	356	523	11477
5	975	0.01	65	0.72	1.98	0.5	17.8	85	184	376	11792	320	407	11792
6	6393	0.19	504	13.63	25.1	10.67	183.3	640	1140	2215	9126	6210	2221	9126
7	904	0.01	38	0.74	1.8	0.55	17.7	79	168	341	11332	270	395	11332
8	1262	0.01	36	0.79	2.48	0.59	23.5	112	243	478	10713	306	591	10713
9	1009	0.01	52	0.71	1.95	0.64	19	88	188	400	11823	444	447	11823
10	719	0.01	43	0.34	1.21	0.52	11.7	58	137	307	10733	143	198	10733
11	1332	0.48	46	1.32	3.09	0.89	30.1	124	241	442	10618	315	316	10618
12	871	0.01	39	0.58	1.59	0.39	16.2	77	164	338	11718	284	427	11718
13	652	0.01	22	0.43	1.3	0.93	13	58	124	265	8990	70	82	8990
14	1477	0.01	90	1.04	2.6	0.83	27.7	129	277	564	11946	427	491	11946
15	952	0.02	28	0.8	1.94	0.58	16.9	82	182	382	10610	179	295	10610
16	1059	22.36	109	14.47	4.79	0.7	23.7	93	196	401	11484	421	577	11484
17	1054	0.01	79	0.98	2.16	0.78	21.5	97	200	397	10850	398	400	10850
18	816	0.01	58	0.63	1.78	0.45	14.6	73	155	319	10780	268	319	10780
19	995	0.01	48	0.64	1.79	0.48	17.7	85	191	396	12189	339	508	12189
20	1164	0.01	50	0.91	2.45	0.6	22	103	212	414	11481	499	560	11481

## TUK 40

1	579	0.02	10	0.76	1.5	0.97	12.9	57	113	217	6849	79	121	6849
2	546	0.84	27	0.71	1.46	0.32	11.2	46	96	193	7021	131	248	7021
3	2145	0.03	44	3.37	7.06	2.15	54.8	220	394	685	9458	372	342	9458
4	997	0.02	31	0.86	2.18	0.8	19.7	89	191	387	9909	182	247	9909
5	954	0.01	37	1.2	2.61	0.96	22.2	91	179	346	9274	258	278	9274
6	1899	0.2	42	2.86	6.13	2.39	50.7	197	361	651	9011	326	419	9011
7	772	0.01	36	0.62	1.76	0.47	15.9	73	148	291	10208	218	298	10208
8	628	0.11	33	0.5	1.24	0.22	12.2	54	115	225	10666	365	534	10666
9	843	0.44	31	1.21	2.58	0.79	21.2	83	155	277	7568	284	383	7568
10	581	0.01	22	0.65	1.47	0.6	11.9	53	109	228	8488	172	195	8488
11	379	1.72	20	0.69	1.09	0.34	8.7	32	67	131	5490	86	198	5490

12	1168	0.01	46	1.31	3.26	0.9	27.1	118	220	391	9526	374	320	9526
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Araz Wash diorite unit

PT-291

1	676	0	35	0.32	0.95	0.28	10.4	54	125	272	10795	223	354	10795
2	1341	0.03	37	1.72	3.57	1.11	30	121	242	453	9019	364	319	9019
3	970	0.01	57	0.55	1.66	0.41	16.6	80	183	389	11579	444	586	11579
4	703	0.01	36	0.46	1.41	0.33	13.1	61	128	265	13527	221	267	13527
5	896	0.03	32	0.4	1.4	0.38	14.4	76	172	382	12738	179	293	12738
6	758	0.01	27	0.52	1.62	0.46	14.3	68	139	279	11107	146	183	11107
7	735	0.11	43	0.43	0.98	0.28	11.6	61	144	314	12081	189	303	12081
8	1450	0.09	71	1.2	2.94	0.77	26.8	123	265	527	12168	590	629	12168
9	955	0.04	31	1.14	2.43	0.55	21.3	90	172	316	10301	276	304	10301
10	875	0.55	48	0.85	1.52	0.4	14.6	74	167	358	12466	296	427	12466
11	848	0.02	35	0.35	1.04	0.25	12.1	70	165	360	12519	238	379	12519
12	894	0.02	38	0.97	2.25	0.67	19.1	80	156	300	10315	292	288	10315

TUK 57

1	748	0.02	41	0.38	1.2	0.52	12.3	61	147	342	10740	162	265	10740
2	1468	0.13	53	3.49	5.59	0.88	37.3	141	270	551	10832	812	809	10832
3	74	0.01	8	0.03	0.07	0.07	0.7	5	15	51	9822	72	335	9822
4	174	1	16	0.1	0.18	0.11	2	12	38	117	12972	100	698	12972
5	3105	0.04	116	1.85	6.32	4.28	71	302	574	1036	9382	1302	2121	9382
6	927	0.03	62	0.55	1.43	0.71	14.9	73	180	465	10562	710	746	10562
7	211	0.02	20	0.22	0.44	0.14	4.3	18	39	102	10870	293	905	10870
8	1198	0.02	73	1.06	2.75	0.51	23.4	106	232	560	15986	1441	2236	15986
9	558	0.02	36	0.42	0.95	0.49	10	46	109	260	10424	215	308	10424
10	820	0.02	39	0.55	1.4	0.7	14.3	71	162	388	9860	159	280	9860
11	422	0.02	27	0.29	0.81	0.34	7.6	34	82	215	10072	154	249	10072
12	240	0.02	22	0.12	0.23	0.09	2.6	16	48	163	15810	107	1559	15810
13	309	4.15	34	0.49	0.72	0.2	6	26	61	163	8573	190	1187	8573
14	684	0.06	7	0.2	0.85	0.15	8.9	56	128	326	12368	186	1296	12368
15	456	0.5	28	0.68	1.29	0.25	10.4	40	81	177	8387	157	255	8387

TUK 58

1	789	0.04	27	0.35	0.89	0.66	9.7	51	145	453	13132	1340	554	13132
2	1015	0.04	13	1.44	3.24	0.31	27.1	107	182	302	10147	181	87	10147
3	412	0.02	7	0.26	0.87	0.37	7.5	34	75	180	10364	201	49	10364
4	468	0.03	13	0.28	0.66	0.07	7	38	88	189	13221	125	151	13221
5	1069	0.03	20	0.15	0.66	0.6	11.8	78	202	471	11958	785	224	11958
6	255	0.01	17	0.08	0.24	0.21	3.2	16	49	152	10750	366	140	10750
7	448	0.05	18	0.17	0.48	0.13	5.3	30	82	231	10975	313	87	10975
8	1055	0.02	27	0.6	1.92	0.04	19.5	99	191	365	13218	751	242	13218
9	186	1.12	14	0.13	0.19	0.16	2.5	12	33	108	7101	295	90	7101
10	517	0.04	27	0.22	0.69	0.11	7.4	39	97	247	11850	412	151	11850

TUK 87

1	5610	0.05	447	6.22	15.86	7.15	138.7	521	962	1849	8592	3561	1958	8592
2	2099	0.06	67	2.06	6.35	2.53	55.4	155	347	859	8011	16187	2365	8011
3	4770	0.08	202	4.66	10.79	4.95	102.1	417	857	1761	7810	2323	1551	7810
4	6969	0.08	345	7.12	17.19	7.16	160.1	661	1237	2255	8898	3828	2075	8898
5	5770	0.05	436	6.34	16.39	6.59	146.5	553	1001	1858	10053	3717	1990	10053
6	1212	0.02	61	0.71	2.11	0.44	20.1	106	224	438	12911	371	522	12911
7	925	0.06	47	0.52	1.45	0.56	14.5	72	179	435	9386	310	1200	9386
8	2195	0.11	72	1.07	1.8	0.7	18.4	126	442	1220	10272	938	1822	10272
9	1642	0.04	23	0.02	0.14	0.07	4.8	77	371	1062	9884	135	1690	9884
10	1015	0.03	65	0.8	2	0.75	19	86	192	455	8324	812	2616	8324
11	1156	0.02	78	0.96	2.36	0.66	21.3	101	210	416	11160	485	493	11160
12	5665	0.12	455	6.63	16.24	7.27	147.4	539	943	1701	10165	4889	1990	10165

13	5117	0.04	429	6.43	16.26	7.25	138.9	488	835	1496	9164	4913	1673	9164
14	5904	0.05	461	7.09	18.4	7.58	150.7	586	1056	1913	9799	4486	2383	9799
15	5010	0.09	387	5.64	14.34	5.99	130.6	479	854	1528	10214	3385	1773	10214
16	4544	0.14	339	4.9	12.65	5.34	117.2	440	778	1380	10030	3509	2098	10030
17	1058	0.03	33	0.1	0.4	0.24	6.1	56	232	733	9585	226	1936	9585
18	2136	0.05	120	0.71	1.54	0.83	19.8	134	432	1010	10085	630	1716	10085
19	1474	0.1	120	1.39	3.87	1.62	34.2	135	259	561	10996	1071	965	10996
20	2348	0.03	54	0.24	0.56	0.27	10	112	479	1313	8557	331	2069	8557

*Middle Camp porphyritic granodiorite unit*

TUK 42

1	449	0.01	34	0.17	0.66	0.21	6.5	33	87	226	12046	222	381	12046
2	703	0.01	26	0.66	1.78	0.71	15	63	130	270	8733	122	152	8733
3	722	0.02	50	0.45	1.19	0.42	12.2	63	140	320	10974	395	517	10974
4	720	0.01	39	0.28	1.15	0.4	12.7	64	140	290	11316	194	240	11316
5	953	0.01	43	0.61	1.67	0.5	16.8	82	184	395	10745	255	331	10745
6	978	0.02	69	0.91	2.55	0.86	23.3	98	186	355	10098	418	366	10098
7	622	0.02	44	0.27	0.8	0.21	7.6	44	120	308	12268	352	552	12268
8	817	0.04	55	0.36	0.98	0.27	9.8	54	159	457	12305	474	935	12305
9	1505	0.01	67	0.99	2.8	0.78	28.3	136	290	592	11607	565	630	11607
10	464	0.01	32	0.16	0.57	0.21	6.8	37	90	202	12419	139	257	12419

TUK 86

1	888	1.85	63	1.67	1.8	0.74	18	83	170	322	10392	155	198	10392
2	767	0.06	16	2.62	3.44	1.53	22.9	73	133	262	8199	163	120	8199
3	897	0.01	55	0.45	1.28	0.31	13.4	69	166	369	12231	475	698	12231
4	1675	0.02	69	1.6	3.53	1.6	28.5	139	308	626	8670	408	403	8670
5	596	0.02	19	0.81	1.88	0.37	16.2	57	102	178	10216	134	131	10216
6	1052	0.01	86	1.33	2.87	1.21	25.6	102	193	356	10030	370	297	10030
7	541	0.03	29	0.94	1.8	0.96	14.1	51	96	182	8458	98	82	8458
8	433	0.01	21	0.31	0.92	0.29	10	41	80	155	10635	110	134	10635
9	1102	0.03	56	1.49	3.37	1.6	26.6	104	206	395	8611	161	160	8611
10	1247	0.02	58	1.4	2.96	1.62	26.6	116	229	442	8585	178	150	8585
11	3905	0.06	177	6.33	12.1	2.87	93.7	376	716	1351	9521	1601	2583	9521
12	1101	0.01	59	0.58	2.04	0.36	18.5	96	206	400	12353	399	558	12353
13	3840	0.05	182	7.8	15.08	6.13	113	382	647	1049	9835	809	498	9835
14	2986	0.12	107	8.51	15.39	7.98	112.8	343	531	831	8766	523	271	8766
15	1432	0.02	81	1.04	2.91	0.7	28	132	263	493	12144	610	671	12144
16	1405	0.04	50	3.02	5.75	2.6	42	145	246	426	8616	283	210	8616
17	3685	0.02	224	2.91	8.43	1.87	85.5	357	654	1159	10156	1232	860	10156
18	1125	0.02	78	1.2	2.72	1.22	25.6	106	210	395	10882	396	407	10882
19	581	0.01	18	0.69	1.38	0.41	12.6	51	104	199	10614	82	112	10614
20	1107	1.98	77	2.49	2.95	1.01	23.7	104	204	374	11042	459	445	11042

TM 650

1	673	0.02	42	0.36	0.98	0.34	10.7	57	130	289	12160	213	350	12160
2	865	0.02	56	1.38	3.08	0.96	22.4	83	157	303	10781	400	500	10781
3	1317	0.02	10	2.25	4.78	1.31	37.7	140	244	407	8195	85	145	8195
4	937	0.02	58	0.59	1.6	0.47	15.6	79	178	386	12305	354	522	12305
5	1031	0.02	69	0.78	1.97	0.68	19.9	92	195	395	12560	489	614	12560
6	137	0.02	16	0.08	0.16	0.11	1.8	10	25	76	11298	140	294	11298
7	293	0.02	22	0.14	0.31	0.13	4.2	23	59	133	12435	70	161	12435
8	3828	0.04	325	4.22	10.7	4.87	94.6	378	706	1315	8930	2359	1608	8930
9	955	0.01	58	0.56	1.63	0.48	15.9	81	184	387	12210	398	565	12210
10	1153	0.06	52	0.69	2.08	0.62	22.8	100	216	430	12087	370	437	12087
11	1893	0.02	72	2.43	6.57	2.4	54.2	200	343	557	10792	393	276	10792
12	942	0.02	58	0.71	1.65	0.52	16.4	79	176	367	11174	365	526	11174
13	926	0.01	55	0.47	1.64	0.49	15.4	78	176	373	12722	320	482	12722
14	846	0.01	53	0.4	1.44	0.44	15	71	161	337	12589	316	480	12589



15	738	0.01	47	0.42	1.11	0.29	12.1	61	141	309	12580	285	465	12580
16	949	0.01	58	0.6	1.77	0.53	17.3	82	180	380	12172	348	506	12172
17	850	0.03	53	0.52	1.42	0.42	15.1	71	160	331	11981	280	411	11981
18	875	0.01	55	0.39	1.43	0.48	14.6	72	165	364	12264	450	606	12264
19	1038	1.33	62	0.96	2.09	0.61	19	90	193	407	11329	371	503	11329
20	928	0.01	59	0.58	1.63	0.57	16.8	81	175	372	12390	394	531	12390
21	980	0.01	60	0.63	1.93	0.61	16.6	83	187	389	12045	412	535	12045
22	711	0.01	37	0.54	1.49	0.52	13.8	62	132	265	10932	188	264	10932

*Gold Rock Ranch granite unit*

TUK 34

1	1537	0.01	64	1.09	2.86	1.14	24.8	121	288	613	8786	300	397	8786
2	1430	0.37	56	1.94	4.69	1.88	36.4	139	258	480	8905	277	265	8905
3	2307	0.12	53	0.55	2.02	0.11	23.6	159	444	1153	20459	637	3918	20459
4.1	686	50.83	1180	52.49	26.57	3.92	47.6	78	123	260	11654	152	334	11654
4.2	764	24.72	810	31.6	18.16	2.92	38.8	79	133	283	11368	166	337	11368
5	1224	0	59	0.45	1.61	0.28	17.6	96	225	483	11948	460	773	11948
6	895	0.01	57	0.41	1.46	0.39	14.4	76	169	353	11548	394	535	11548
7	2530	0.06	79	3.88	7.56	2.68	60.6	237	454	850	9418	668	610	9418
8	821	0.01	48	0.39	1.16	0.31	12.5	66	150	327	11768	285	480	11768
9	698	0	35	0.23	0.85	0.18	8.7	53	131	310	11771	163	330	11771
10	1840	0.03	117	1.68	3.67	1.75	38.9	181	348	690	12554	1010	934	12554
11	1940	0.28	68	5.54	7.58	2.88	54.4	203	399	798	11116	470	480	11116
12	1107	0	44	0.6	1.6	0.6	17.9	86	206	439	12420	194	340	12420

TUK 44

1	3103	0.062	248	3.71	7.69	3.19	71.9	326	583	1059	8843	2111	1491	8843
2	1620	0.068	31	3.53	5.67	1.75	43.2	164	293	523	9100	318	302	9100
3	1028	0.47	78	1.48	2.68	1.12	22.6	104	197	419	10522	621	656	10522
4	1563	0.028	102	3.08	4.99	2.93	43.3	172	280	489	7687	520	318	7687
5	565	3.655	61	2.43	1.51	0.32	10.1	45	108	242	11839	363	491	11839
6	1784	0.091	30	0.88	2.19	0.76	23	153	380	865	10824	132	499	10824
7	864	3.342	37	4.05	2.92	0.23	20.9	94	164	290	9688	191	558	9688
8	556	0.343	34	0.51	0.71	0.32	7.4	43	110	284	11314	266	746	11314
9	939	0.003	55	0.64	1.42	0.48	15.6	82	184	387	11023	464	627	11023
10	1296	0.024	67	2.04	3.38	1.26	28.8	124	254	476	9335	630	493	9335
11	1761	0.021	68	1.99	3.51	1.47	30.3	151	343	732	8683	254	332	8683
12	1347	0.025	20	2.04	3.94	0.55	33.2	137	252	415	9864	204	501	9864

1. Analytical procedures are described in Barth and Wooden (2010)

Table DR5. Pb isotopic compositions for feldspar from Jurassic volcanic and plutonic rocks, lower Colorado River region, Arizona and California.

Sample	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{207}\text{Pb}/^{204}\text{Pb}$	$^{208}\text{Pb}/^{204}\text{Pb}$	Sample	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{207}\text{Pb}/^{204}\text{Pb}$	$^{208}\text{Pb}/^{204}\text{Pb}$
<i>Dome Rock sequence</i>				<i>Middle Camp porphyritic granodiorite</i>			
TUK13	19.06	15.661	39.388	MM8716	19.26	15.67	39.7
TUK18	18.841	15.658	39.169	TUK70	19.129	15.689	39.606
TUK63	19.311	15.708	38.849	TUK67	19.128	15.674	39.553
TUK17	19.025	15.68	39.543	9 DT 1	19.11	15.671	39.529
TUK29	18.491	15.626	38.547	TM228	18.638	15.626	39.005
TUK40	19.33	15.63	39.31	TM238	18.139	15.608	39.659
TUK61	18.856	15.621	39.038	TUK8	18.902	15.674	39.096
TUK46	18.589	15.622	38.603	TUK9	17.463	15.558	37.578
TUK82	19.042	15.65	39.291	TM650	18.766	15.637	38.998
TUK81	18.331	15.584	38.275	TUK37	18.996	15.683	39.496
				TUK31	18.986	15.67	39.184
				TUK73	18.957	15.689	39.186
<i>Araz Wash diorite unit</i>				PT285	18.63	15.629	38.852
9 DT 2	19.074	15.666	39.456	TUK42	19.195	15.657	39.348
9 DT 6	18.397	15.601	39.081	TUK57	18.445	15.606	38.503
TM652	18.552	15.626	38.528	6 DT 6	18.981	18.638	39.205
7DT1	18.335	15.602	38.322	PT-285	18.63	15.629	38.852
PT 383	18.386	15.579	38.364	SFMG	18.463	15.599	38.391
PT 279	18.471	15.572	38.324	TUK48	18.995	15.656	39.329
7 DT 7	18.847	15.642	39.088	6DT4	19.117	15.666	39.24
PT 291	18.928	15.636	38.957	6DT5	18.898	15.637	38.935
TM652	18.552	15.626	38.528				
PT279	18.471	15.572	38.324	<i>Gold Rock Ranch granite unit</i>			
TM789	18.5	15.612	38.634	MM87-20	19.95	15.75	40.2
TM562	19.553	15.739	39.191	TUK65	19.758	15.733	40.338
TM457	18.348	15.597	38.335	TUK68	19.669	15.736	40.297
PT369	18.474	15.606	38.501	TUK69	19.389	15.692	39.666
TM594	19.284	15.691	38.745	TUK36	18.713	15.641	38.927
TUK57	18.445	15.606	38.503	TUK32	19.149	15.658	39.148
TUK58	18.594	15.618	38.555	TUK59	18.896	15.661	39.232
PT360	18.509	15.595	38.297	TUK34	19.489	15.668	39.558
TUK75	19.115	15.677	39.318	TUK60	19.107	15.668	39.217
TUK58	18.594	15.618	38.555	MC144	18.867	15.654	38.951
				TUK80	18.698	15.637	38.861
<i>Dike swarm</i>				TUK47	18.897	15.661	39.099
TUK26	19.397	15.655	39.029	TUK44	18.494	15.616	38.581
TUK12	18.501	15.65	38.745				

1. Isotopic compositions measured from feldspar mineral separate after standard chromatography separation of elements Finnigan MAT261 at the U.S. Geological Survey, Menlo Park

Table DR6. Sr and Nd isotopic compositions for Jurassic volcanic and intrusive rocks, lower Colorado River region, Arizona and California.

Sample number	Location	Age	Rb (ppm)	Sr (ppm)	<sup>87</sup> Rb/ <sup>86</sup> Sr	87Sr/ 86Sr(m)	<sup>87</sup> Sr/ <sup>86</sup> Sr(t)	Sm (ppm)	Nd (ppm)	Sm/Nd	<sup>147</sup> Sm/ <sup>144</sup> Nd	<sup>143</sup> Nd / <sup>144</sup> Nd	$\epsilon_{Nd(m)}$	$\epsilon_{Nd(t)}$	<sup>143</sup> Nd/ <sup>144</sup> Nd(t)
<i>Dome Rock sequence</i>															
TUK 81	CMM	180	96	890	0.31	0.70726	0.70649								
TUK-63	DRM	170	130	320	1.18	0.7139	0.71106	6.91	39.58	0.1747	0.1056	0.51202	-12.1	-10.1	0.511897
<i>Araz Wash diorite unit</i>															
TM-941	DRM	170	142	330	1.25	0.71339	0.71038	6.31	33.43	0.1888	0.1142	0.5121	-10.6	-8.8	0.51197
TM-844	DRM	170	285	80	10.33	0.73233	0.70736								
TM-457	TP	170	39	690	0.16	0.70837	0.70797	6.54	36.94	0.1771	0.107	0.51204	-11.6	-9.6	0.511925
TM-791	TP	170	49	790	0.18	0.70795	0.70752	3.85	30.38	0.1267	0.0766	0.51201	-12.2	-9.6	0.511929
TM-562	TM	170	20	730	0.08	0.7087	0.70851	1.86	8.45	0.2199	0.133	0.51211	-10.4	-9	0.511958
TM-452	TM	170	110	220	1.45	0.71382	0.71032	6.73	36.88	0.1824	0.1102	0.51194	-13.6	-11.7	0.511816
7-DT-1	TM	170	56	730	0.22	0.70673	0.70619	5.28	30.91	0.171	0.1033	0.51212	-10.2	-8.1	0.511998
PT-383	TM	170	62	490	0.37	0.70686	0.70598	6.41	32.37	0.198	0.1197	0.51234	-5.9	-4.2	0.512202
PT-360	TM	170	10	810	0.04	0.70613	0.70604								
TM 652	TM	170	16	640	0.07	0.70731	0.70714								
7-DT-7	CMM	170	102	435	0.68	0.70955	0.70788	6.26	32.54	0.1923	0.1163	0.51211	-10.3	-8.5	0.511979
MC-1	CMM	170	97	440	0.64	0.7106	0.7091	9.2	48.82	0.1884	0.1139	0.51207	-11	-9.2	0.511944
TUK-57	CMM	170	88	788	0.32	0.70694	0.70618	4.17	22.01	0.1897	0.1147	0.51215	-9.5	-7.7	0.51202
MC-290	CMM	170	160	850	0.54	0.70712	0.70578	5	27.25	0.1834	0.1109	0.51211	-10.4	-8.5	0.511981
TUK-58	CMM	170	124	885	0.41	0.70783	0.70688	2.74	13.39	0.2048	0.1238	0.51201	-12.3	-10.7	0.511869
MC 57	CMM	170	140	920	0.44	0.70801	0.70693								
CM-89-2a	CMM	170	171	419	0.41	0.70996	0.70706								
CM-88-21	CMM	170	78	443	0.18	0.70877	0.70752								
CM-89-7a	CMM	170	68	534	0.13	0.71035	0.70944								
CM-88-5	CMM	170	107	543	0.2	0.70962	0.70822								
<i>Middle Camp porphyritic granodiorite unit</i>															
9-DT-1	LMM	165	164	360	1.32	0.71210	0.70901								
TM-938	DRM	165	146	260	1.63	0.71390	0.70913	5.73	33.44	0.1714	0.1036	0.51206	-11.2	-9.3	0.51195
TM-635	TP	165	115	330	1.01	0.71147	0.70910	5.19	31.17	0.1665	0.1007	0.51206	-11.2	-9.2	0.511954
TM-653	TP	165	90	540	0.48	0.70992	0.70879	6.14	34.97	0.1757	0.1062	0.51205	-11.5	-9.6	0.511932
TM-636	TP	165	185	140	3.83	0.71339	0.70924	1.81	12.19	0.1484	0.0897	0.51197	-13	-10.8	0.51188
TM-651	TP	165	140	410	0.99	0.73233	0.70740	5.19	36.79	0.141	0.0852	0.51209	-10.8	-8.5	0.511996
TM-228	MM	165	115	415	0.80	0.70837	0.70896	5.49	32.35	0.1698	0.1026	0.51205	-11.4	-9.5	0.511945
TM-558	TM	165	96	490	0.57	0.70795	0.70978	8.55	46.8	0.1827	0.1105	0.51207	-11.2	-9.3	0.511947
PT-280	CM	165	10	580	0.05	0.70870	0.70611	2.15	8.74	0.2461	0.1487	0.51238	-5.1	-4	0.512214
PT-285	CM	165	74	500	0.43	0.71382	0.70921	7.39	39.15	0.1889	0.1142	0.51207	-11.1	-9.3	0.511948
<i>Gold Rock Ranch granite unit</i>															
TM-594	DRM	160	250	130	5.57	0.70726	0.71471								
TUK-34	CMM	160	210	100	6.09	0.71390	0.71072	5.45	32.25	0.1691	0.1022	0.51211	-10.4	-8.4	0.512
AG-25	CMM	160	250	162	4.47	0.72107	0.7109	5.85	39.5	0.1482	0.0896	0.51204	-11.6	-9.5	0.511947
AG7	CMM	160	200	390	1.05	0.71212	0.70874	0.24	0.54	0.4369	0.2641	0.51211	-10.3	-11.7	0.511834
AG 4	CMM	160	174	325	1.55	0.71339	0.70967								
AG 40	CMM	160	225	210	3.1	0.73233	0.70871								
MC 174	CMM	160	220	245	2.6	0.70837	0.7085								
MC 90	CMM	160	240	240	2.89	0.70795	0.71085								
AG 3	CMM	160	260	188	4.01	0.70870	0.71060								
MC54	CMM	160	140	510	0.79	0.71382	0.70651								
TM-939	DRM	158	194	112	5.02	0.70726	0.71273	3.98	21.69	0.1833	0.1108	0.51209	-10.6	-8.8	0.511974
TUK-36	TP	158	110	310	1.03	0.71390	0.70842								
<i>Dike swarm</i>															
TUK-26	TM	158	65	185	1.02	0.70994	0.70766	8.83	49.04	0.18	0.1088	0.51216	-9.2	-7.5	0.512051
TUK-12	MM	158	42	940	0.13	0.70595	0.70565	5.87	30.7	0.1912	0.1156	0.51248	-3	-1.4	0.512366

1. Isotopic compositions measured after standard chromatography separation of elements on Finnigan MAT261 at the U.S. Geological Survey, Menlo Park. Rubidium and Sr concentrations are from Table 1.

Sm and Nd concentrations were measured using isotope dilution techniques at the U.S. Geological Survey in Menlo Park.

2. Locations: CM, Chocolate Mountains; CMM, Cargo Muchacho Mountains; DRM, Dome Rock Mountains; MM; Mule Mountains TM, Trigo Mountains; TP, Trigo Peaks.