Table DR1: U-Pb Isotopic Data (from GSA SPE522-11 Mueller)

Sample Spot	Age(Ma) 206Pb/238U	1σ error	Age (Ma) 207Pb/206Pb	1 σ error	Discordance %
LaHood matrix, Jefferson Canyon					
BLH-1	3347	28	3507	11	5%
BLH1-2	3547	39	3528	15	-1%
BLH1-3	3402	31	3491	12	3%
BLH1-4.1	3401	18	3498	7	3%
BLH1-5	1703	11	3436	7	50%
BLH1-6	3434	15	3479	6	1%
BLH1-7	3227	15	3453	5	7%
BLH1-8	3329	22	3534	9	6%
BLH1-9	3381	35	3416	15	1%
BLH1-10	3424	26	3522	10	3%
BLH1-11	3721	31	3517	9	-6%
BLH1-12	3412	42	3529	15	3%
BLH1-13	3115	21	3244	10	4%
BLH1-14	2602	7	3381	4	23%
BLH1-15	945	5	3040	9	69%
BLH1-16	2325	10	3434	6	32%
BLH-1_17	938	218	2889	109	68%
BLH-1_18	2887	102	3353	51	14%
BLH-1_19	1494	88	3223	44	54%
BLH-1_20	402	29	1852	14	78%
BLH-1_21	315	5	1596	3	80%
BLH-1_22	1231	116	3263	58	62%
BLH-1_23	2439	79	2915	40	16%
BLH-1_24	1615	25	2138	13	24%
BLH-1_25	2738	24	3229	12	15%
BLH-1_26	3351	94	3469	47	3%
BLH-1_27	3346	76	3546	38	6%
BLH-1_28	530	55	2281	27	77%
BLH-1_29	2664	91	3190	46	16%
BLH-1_30	3399	69	3767	35	10%
BLH-1_31	3056	66	3433	33	11%
BLH-1_32	3051	67	3504	34	13%
BLH-1_33	737	107	3085	54	76%
BLH-1_34	1934	138	3237	69	40%
BLH-1_35	1823	49	3218	24	43%
BLH-1_36	2922	120	3450	60	15%
BLH-1_37	1645	21	2349	10	30%
BLH-1_38	2068	147	3652	74	43%
BLH-1_39	3215	61	3511	31	8%
BLH-1_40	2984	59	3433	29	13%
BLH-1_41	566	14	3192	7	82%
BLH-1_42	2989	67	3247	33	8%
BLH-1_43	2841	73	3265	37	13%
BLH-1_44	2490	50	3068	25	19%
BLH-1_45	2675	42	3341	21	20%

BLH-1_46	2180	216	3608	108	40%
BLH-1_47	2662	179	3125	90	15%
BLH-1_48	3274	72	3505	36	7%
BLH-1_49	3247	74	3488	37	7%
BLH-1_50	1487	59	3181	29	53%
BLH-1_51	727	41	3143	21	77%
BLH-1_52	3232	63	3531	31	8%
BLH-1_53	2576	54	3769	27	32%
BLH-1_54	3240	70	3514	35	8%
BLH-1_55	2458	87	3004	43	18%
BLH-1_56	3206	57	3547	29	10%
BLH-1_57	2671	124	3456	62	23%
BLH-1_58	1914	176	3611	88	47%
BLH-1_59	1355	96	3279	48	59%
BLH-1_60	3224	83	3351	41	4%
BLH-1_61	3151	63	3341	32	6%
BLH-1_62	2419	151	3388	76	29%
BLH-1_63	3016	72	3258	36	7%
BLH-1_64	1795	166	2425	83	26%
BLH-1_65	3311	75	3493	37	5%
BLH-1_66	555	44	2337	22	76%

LaHood clast, Jefferson Canyon			Age	3250 +/-11 M	n=15
BLH5H-1.1	3028	17	3404	73	11%
BLH5H-2.1	2846	17	3228	8	12%
BLH5H-3.1	3114	24	3262	11	5%
BLH5H-4.1	3267	14	3265	5	0%
BLH5H-5.1	3147	20	3267	7	4%
BLH5H-6.1	3166	16	3263	6	3%
BLH5H-7.1	2905	16	3254	6	11%
BLH5H-8.1	3203	22	3622	8	12%
BLH5H-9.1	3114	12	3492	5	11%
BLH5H-10.1	2518	15	3094	12	19%
BLH5H-11.1	2104	10	3212	8	34%
BLH5H-12.1	1515	5	3469	7	56%
BLH5H-13.1	3412	20	3597	7	5%
BLH5H-14.1	348	2	3069	36	89%
BLH5H-15.1	2649	13	3251	8	19%
BLH5H-16.1	3158	15	3284	5	4%
BLH5H-17.1	418	2	1651	18	75%
BLH5H-17.2	2989	15	3259	10	8%
BLH5H-18.1	2004	8	3211	8	38%
BLH5H-19.1	2654	18	3300	25	20%
BLH5H-20.1	3041	19	3227	8	6%
BLH5H-21.1	3163	18	3254	7	3%
BLH5H-22.1	677	2	3352	7	80%
BLH5H-23.1	3127	20	3265	23	4%
BLH5H-23.2	785	7	2370	37	67%
BLH5H-24.1	3237	22	3242	8	0%

BLH5H-25.1	1644	5	3138	9	48%
BLH5H-26.1	385	2	1724	22	78%
BLH5H-27.1	1142	4	3123	12	63%

LaHood clast, Jefferson Canyon			Age	3525+/-13 Ma	n=11
BLH5I-1	2715	55	3328	39	18%
BLH5I-1.2	3471	12	3538	4	2%
BLH5I-2	3263	26	3500	12	7%
BLH5I-2.2	1660	5	2993	10	45%
BLH5I-3	3287	74	3244	43	-1%
BLH5I-3.2	3122	16	3435	8	9%
BLH5I-4	3212	18	3259	7	1%
BLH5I-5	3109	17	3659	90	15%
BLH5I-6	697	10	2930	41	76%
BLH5I-7	3135	77	3355	36	7%
BLH5I-7.2	3051	13	3484	10	12%
BLH5I-8.1R	2936	29	3518	13	17%
BLH5I-9	2549	27	3325	37	23%
BLH5I-10	3034	19	3243	9	6%
BLH5I-11	2992	25	3487	11	14%
BLH5I-12	3256	20	3510	12	7%
BLH5I-14.1	3420	17	3524	5	3%
BLH5I-15.1	989	16	3271	47	70%
BLH5I-16.1	3116	17	3488	10	11%
BLH5I-17.1	3137	64	3332	38	6%
BLH5I-17.2	3523	25	3553	7	1%
BLH5I-18.1	3254	28	3558	10	9%
BLH5I-19.1	3365	18	3533	6	5%
BLH5I-20.1	744	5	3338	157	78%
BLH5I-21.1	3216	14	3524	5	9%
BLH5I-22.1	2438	53	3148	48	23%
BLH5I-23.1	3323	17	3534	7	6%
BLH5I-24.1	1303	5	3432	9	62%
BLH5I-25.1	3243	15	3457	8	6%
BLH5I-26.1	1079	2	2992	4	64%
BLH5I-27.1	2679	10	3460	9	23%
BLH5I-28.1	3045	46	3300	18	8%

LaHood, N of I-90: N45.53.05; W111.57.36

BLH2-1	2730	6	3346	4	18%
BLH2-2	3486	22	3502	9	0%
BLH2-3	3629	14	3728	5	3%
BLH2-4	1401	5	3200	8	56%
BLH2-5	1078	4	2592	12	58%
BLH2-6	3387	20	3586	9	6%
BLH2-7	3246	27	3346	13	3%
BLH2-8	1095	5	2457	17	55%
BLH2-9	3544	25	3528	10	0%
BLH2-10	3199	15	3258	7	2%

BLH2-11	2442	7	3266	6	25%
BLH2-12	3285	19	3253	9	-1%
BLH2-13	3015	13	3244	7	7%
BLH2-14	3283	24	3226	14	-2%
BLH2-15	1860	12	1892	19	2%
BLH2-16	3031	19	3304	10	8%
BLH2-17	1383	6	2561	10	46%
BLH2-18	3204	26	3253	12	1%
BLH2-19	2888	12	3450	7	16%
BLH2-20	3427	13	3622	5	5%
BLH2-21	3395	33	3561	13	5%
BLH2-22	1414	6	1846	16	23%
BLH2-23	2440	9	3248	5	25%
BLH2-24	2512	8	3383	5	26%
BLH2-25	3021	26	3213	14	6%
BLH2-26	3393	25	3498	21	3%
BLH2-27	2211	12	2326	13	5%

LaHood, N of I-90: N45.50.435; W111.54.600

GSM-1_01	3058	18	3333	11	8%
GSM-1_03	3562	45	3547	5	0%
GSM-1_04	3591	31	3458	9	-4%
GSM-1_05	2482	124	3577	14	31%
GSM-1_06	2821	47	3416	6	17%
GSM-1_11	2781	25	3085	6	10%
GSM-1_13	1703	162	2624	22	35%
GSM-1_14	1542	75	3204	8	52%
GSM-1_17	1542	75	3204	8	52%
GSM-1_18	2210	186	3304	26	33%
GSM-1_19	1873	25	1783	6	-5%
GSM-1_20	2527	22	3353	7	25%
GSM-1_21	3309	32	3336	5	1%
GSM-1_22	2214	57	3264	6	32%
GSM-1_23	3344	32	3695	5	9%
GSM-1_24	2743	41	3608	21	24%
GSM-1_28	3204	35	3231	5	1%
GSM-1_47	3192	34	3440	5	7%
GSM-1_30	347	5	3072	13	89%
GSM-1_31	1897	14	2307	11	18%
GSM-1_32	3207	37	3266	5	2%
GSM-1_33	3291	45	3444	9	4%
GSM-1_34	1165	83	3192	26	63%
GSM-1_36	3135	52	3462	7	9%
GSM-1_36	2962	71	3461	15	14%
GSM-1_37	1905	10	3350	6	43%
GSM-1_38	3154	37	3274	5	4%
GSM-1_39	455	12	2631	10	83%
GSM-1_40	1364	56	3068	7	56%
GSM-1_43	3045	25	3287	6	7%

GSM-1_48	3050	58	3233	5	6%
GSM-1_50	2234	9	2975	30	25%
GSM-1_51	2306	43	3586	7	36%
GSM-1_53	3269	128	3239	6	-1%
GSM-1_54	1473	113	2576	19	43%
GSM-1_56	3250	42	3484	5	7%
GSM-1_57	3347	31	3480	5	4%
GSM-1_58	2405	52	3288	6	27%
GSM-1_68	2727	80	3294	24	17%
GSM-1_74	2467	76	3226	16	24%

LaHood, N of I-90: N45.53.371; W111.57.994

GSM-2_01	2911	46	3403	9	14%
GSM-2_02	233	5	2565	8	91%
GSM-2_03	2906	33	3258	4	11%
GSM-2_04	231	4	1867	17	88%
GSM-2_07	3577	58	3815	4	6%
GSM-2_15	849	31	2681	11	68%
GSM-2_16	2227	33	3137	5	29%
GSM-2_11	2430	50	2696	12	10%
GSM-2_13	3374	43	3518	6	4%
GSM-2_14	2725	45	3406	7	20%
GSM-2_18C	3311	44	3343	5	1%
GSM-2_18R	3191	58	3334	4	4%
GSM-2_19	897	34	3186	22	72%
GSM-2_20	3378	26	3496	6	3%
GSM-2_21	1856	81	3433	8	46%
GSM-2_23	3298	37	3486	5	5%
GSM-2_24	2486	26	3484	5	29%
GSM-2_27	2271	101	3375	16	33%
GSM-2_29	1463	60	2469	19	41%
GSM-2_31	2275	59	2758	9	17%
GSM-2_32	865	16	1929	9	55%
GSM-2_33	3192	59	3389	7	6%
GSM-2_34	196	3	2318	15	92%
GSM-2_35	1947	170	3606	38	46%
GSM-2_36	2212	51	2687	9	18%
GSM-2_37	3187	31	3504	5	9%
GSM-2_38	2839	27	3212	5	12%
GSM-2_39	1672	45	2664	7	37%
GSM-2_41	2700	37	3462	9	22%
GSM-2_45	285	7	2509	45	89%
GSM-2_46	1607	22	1805	5	11%
GSM-2_47	695	16	2897	69	76%
GSM-2_49	2187	16	2599	13	16%
GSM-2_50	1327	58	3352	12	60%
GSM-2_56	383	6	2434	7	84%
GSM-2_57	600	15	3087	21	81%
GSM-2_63	523	5	3078	10	83%

GSM-2_66	1299	18	2494	6	48%
GSM-2_69	2454	84	3231	7	24%
GSM-2_53	2850	32	3226	4	12%
LaHood, Horseshoe Hills					
BLH3A-1.1	2734	11	2857	7	4%
BLH3A-2.1	2991	14	3375	9	11%
BLH3A-2.2R	2741	14	3372	12	19%
BLH3A-3.1	3117	20	3247	7	4%
BLH3A-5.1	1780	13	1837	16	3%
BLH3A-6.1	3277	18	3375	9	3%
BLH3A-7.1	3298	25	3302	17	0%
BLH3A-8.1	3173	17	3258	6	3%
BLH3A-9.1	3281	28	3312	9	1%
BLH3A-10.1	3240	12	3255	8	0%
BLH3A-11.1	3224	21	3268	17	1%
BLH3A-12.1	3141	15	3270	7	4%
BLH3A-4.1	2267	25	3286	69	31%
BLH3A-13.1	2624	12	3206	8	18%
BLH3A-14.1	3241	27	3269	9	1%
BLH3A-15.1	3264	15	3259	5	0%
BLH3A-16.1	3158	18	3263	14	3%
BLH3A-17.1	3156	18	3534	14	11%
BLH3A-18.1	3288	21	3266	7	-1%
BLH3A-19.1	1813	14	1818	17	0%
BLH3A-20.1	2978	16	3278	10	9%
BLH3A-21.1	3220	18	3315	22	3%
BLH3A-22.1	3304	17	3575	6	8%
Niehart/NQ98-2			N46.54.47	W110.41.51	
NQ982-1.1	1787	20	1885	29	5%
NQ982-2.1	1787	20	1770	17	-1%
NQ982-3.1	2769	28	2802	8	1%
NQ982-3.2T	2918	35	2841	13	-3%
NQ982-4.1C	2543	28	2502	12	-2%
NQ982-5.1C	2615	32	2537	16	-3%
NQ982-6.1C	1769	24	1791	30	1%
NQ982-7.1C	1773	24	1860	25	5%
NQ98-2-8.1C	604	25	1488	1568	59%
NQ982-9.1C	1850	24	1850	23	0%
NQ982-10.1	2589	31	2707	14	4%
NQ982-11.1	1796	23	1761	25	-2%
NQ982-12.1	2414	28	2628	13	8%
NQ982-13.1	1716	21	1872	23	8%
NQ982-14.1	1785	28	1838	32	3%
NQ982-15.1	2116	25	2088	20	-1%
NQ982-16.1	1783	24	1798	26	1%

NQ982-17.1	2595	26	2707	10	4%
NQ982-18.1	1795	21	1869	18	4%
NQ982-19.1	1592	21	1846	44	14%
NQ982-20.1	1731	21	1975	28	12%
NQ982-21.1	2452	31	2687	27	9%
NQ982-22.1	1845	23	1783	21	-3%
NQ982-23.1	1676	18	1820	34	8%
NQ982-24.1	1759	20	1813	16	3%
NQ982-25.1	1722	20	1813	17	5%
NQ982-26.1	1769	23	1773	24	0%
NQ982-27.1	1727	22	1816	22	5%
NQ982-28.1	3350	39	3358	11	0%
NQ982-29.1	1785	20	1870	16	5%
NQ982-30.1	1715	19	1810	19	5%
NQ982-31.1	1669	18	1778	20	6%
NQ982-32.1	2391	27	2483	13	4%
NQ982-33.1	2558	37	2700	20	5%
NQ982-34.1	1690	22	1827	24	8%
NQ982-35.1	2513	29	2674	12	6%
NQ982-36.1	1638	21	1846	54	11%
NQ982-37.1	2583	28	2965	17	13%
NQ982-38.1	1851	23	1851	21	0%
NQ982-39.1	1732	26	1806	31	4%
NQ982-40.1	1758	24	1771	27	1%
NQ982-41.1	2708	33	2947	13	8%

Armstead anticline			Age = 2.71+/-0.012 Ga		n=10
AA1-1	2780	59	2732	13	-2%
AA1-2	2688	55	2691	10	0%
AA1-3	2693	58	2696	14	0%
AA1-4	2750	56	2722	7	-1%
AA1-5	2152	46	2395	9	10%
AA1-6	2735	58	2727	13	0%
AA1-7	2099	16	2545	17	18%
AA1-8	2291	20	2667	60	14%
AA1-9	2293	8	2690	6	15%
AA1-10	2401	46	2592	31	7%
AA1-11	2458	9	2694	7	9%
AA1-12	2253	7	2449	26	8%
AA1-13	2244	4	2632	4	15%
AA1-14	2473	7	2655	8	7%
AA1-15	1949	8	2163	10	10%
AA1-16	2570	23	2712	18	5%
AA1-17	2108	23	2483	72	15%
AA1-18	2493	6	2682	4	7%

AA1-19.1	2432	13	2715	10	10%
AA1-20	2286	17	2627	23	13%

Beaverheads (Medicine Lodge valley) 2.45 Ga concordia intercept

BHT-1	2092	4	2357	8	11%
BHT2-2	2440	7	2484	9	2%
BHT2-3	2462	8	2469	5	0%
BHT2-4	2324	22	2402	11	3%
BHT2-5	1713	4	1753	6	2%
BHT2-6	1783	4	1771	6	-1%
BHT2-7T	1738	3	1754	5	1%
BHT2-8R	2142	5	2281	6	6%
BHT2-9	1679	3	1749	5	4%
BHT2-10	2123	4	2425	9	12%
BHT2-11	2369	7	2421	7	2%
BHT2-12	1864	5	2067	5	10%
BHT2-13	1749	4	1823	6	4%
BHT2-14	2003	4	2388	8	16%
BHT2-15	1814	4	2127	8	15%

Tendoys (Bloody Dick Creek) Age = 1.91 +/- 0.02 Ga n=8

BDC2-1.1R	1816	4	1793	4	-1%
BDC2-1.2C	1860	10	1844	21	-1%
BDC2-2.1	1899	14	1906	16	0%
BDC2-3.1	1897	5	1879	6	-1%
BDC2-4.1	2023	10	1970	10	-3%
BDC2-5.1	1916	20	1919	24	0%
BDC2-6.1	1832	6	1865	7	2%
BDC2-7.1	1864	4	1793	5	-4%
BDC2-6.2C	1855	48	1902	14	2%
BDC2-7.2C	1834	18	1909	19	4%
BDC2-8.1	1870	13	1898	16	1%
BDC2-9.1R	1781	6	1783	7	0%
BDC2-10.1	1918	16	1909	19	0%
BDC2-11.1	2359	21	2580	34	9%
BDC2-12.1	1808	14	1896	19	5%

BDC-4 Age = 1.89+/-0.013 Ga n=10

BDC4-1.1	1832	11	1893	13	3%
BDC4-2.1R	1946	5	1980	5	2%
BDC4-3.1	1817	12	1805	15	-1%
BDC4-4.1R	1729	6	1795	9	4%
BDC4-4.2C	1915	10	1870	18	-2%
BDC4-5.1	1958	5	1976	6	1%
BDC4-6.1R	1727	6	1802	12	4%
BDC4-6.2C	1909	8	1867	9	-2%
BDC4-7.1	1780	8	1898	10	6%
BDC4-8.1	1858	7	1904	9	2%
BDC4-9.1	1778	16	1844	13	4%

BDC4-10.1R	1726	7	1777	10	3%
BDC4-10.2C	1913	18	1892	21	-1%
BDC4-11.1R	1788	6	1819	25	2%
BDC4-11.2C	1901	9	1908	11	0%
BDC4-12.1	1915	8	1883	9	-2%
BDC4-13.1	2005	11	2016	155	1%
BDC4-14.1	1801	11	1897	15	5%
BDC4-15.1	1951	11	1974	12	1%
BDC-5		Age = 1.79+/-0.019 Ga (Th/U< 0.1)			n=7
BDC5-1	1857	11	1859	15	0%
BDC5-2.1	1769	6	1786	7	1%
BDC5-3.1	1803	5	1800	5	0%
BDC5-4.1	1746	6	1803	7	3%
BDC5-5.1	1628	6	1728	9	6%
BDC5-6.1	1818	11	1885	12	4%
BDC5-6.2T	1808	7	1792	9	-1%
BDC5-7.1R	1812	6	1790	8	-1%
BDC5-8.1	1766	6	1797	6	2%
BDC5-9.1	1733	8	1782	16	3%
BDC5-10.1	1763	5	1797	6	2%
BDC-6			Age = 1.80+/-0.06 Ga		n=12
BDC6-1.1	1784	9	1800	12	1%
BDC6-2.1	1804	7	1807	9	0%
BDC6-3.1R	1783	5	1783	18	0%
BDC6-4.1	1832	12	1790	14	-2%
BDC6-5.1	1780	8	1788	11	0%
BDC6-6.1	1799	8	1773	39	-1%
BDC6-7.1	2324	11	2351	12	1%
BDC6-8.1	1825	8	1794	11	-2%
BDC6-7.2R	1931	7	1771	56	-9%
BDC6-8.1	1772	10	1801	15	2%
BDC6-10.1	1757	9	1809	12	3%
BDC6-11.1	1791	13	1819	14	1%
BDC6-12.1R	1794	6	1794	13	0%
BDC6-13.1	1745	9	1799	12	3%
BDC6-14.1	1772	12	1791	16	1%
Blacktails					
BT731-mo	1446	72	2438	10	41%
BT731-m1	1783	4	2479	5	28%

All ages based only on analyses with Th/U > 0.1 unless noted.
Entries in gray have common 206Pb >1%.
Entries in red have Th/U < 0.1.
n = number of analyses used to calculate age.
Latitude and Longitude of samples in Table 2, except NQ98-2, BLH-2, and GSM (given here).
Data for BT731 are from multi-grain samples with slightly different magnetic susceptibilities

by ID-TIMS (isotope dilution, thermal ionization mass spectrometry).
Common Pb corrected using the Stacey-Kramers (1975) model Pb.