DR Document 1

Geochemistry

Preliminary major-element and trace-element data are presented for the Cryogenian and Cambrian syenite-diorite suites of the Big Creek-Beaverhead belt (Data Repository Tables DR1 and DR2). Because of the inaccessibility of most of these suites within a large wilderness area, the geochemical data are mostly from samples collected for geochronology rather than for a comprehensive geochemical study. Although not every phase in each composite suite is represented, the major phases are documented within the data set as a whole. Geochemical data for an additional sample of quartz syenite from the Ramey Ridge Suite is reported by Leonard (1963). Geochemical data for Cryogenian metavolcanic rocks of the Edwardsburg Formation are presented also for comparison because they are co-located with the Ramey Ridge suite at the northwestern end of the belt and they lie along a nearby parallel zone across much of the state. Major- and trace-element data for the two data sets are plotted together in Figure DR1.

Plots of major-element data indicate that both the Cryogenian and Cambrian plutonic suites diplay a tholeiitic trend (Fig. DR1A) and are a ferroan tholeiitic composition (Fig. DR1B, C). Although displaying distinct modal variation in terms of the mafic mineral content, the SiO_2 content overall is low and the variation in SiO_2 between the two phases is distinct but small (Fig. DR1D, E, F) with syenodiorites <52% SiO_2 and syenites >59% SiO_2) making these only mildly bimodal in terms of silica content (Suneson and Lucchitta, 1983). Plutonic suites of both ages are alkalic (Fig. DR1D, E). They are dominantly metaluminous with some plotting as peraluminous (Fig. DR1F). As plotted on tectonic discrimination diagrams, trace-element data indicate that the plutons originated as within-plate magmas (Fig. DR1G-K). There is no systematic variation in geochemistry of the plutonic suites from west to east or between suites of the two different ages.

The volcanic rocks in the Edwardsburg Formation also display a tholeiitic trend that is dominantly ferroan (Fig. DR1A, B, C). The SiO_2 values from this small sample set display bimodal character (SiO_2 values of about 65% and of about 42%). Chemical classification indicates they are both basalt (possibly ultramafic) and trachydacite-dacite (Fig. DR1D). These are subalkaline, alkali-calcic to marginally alkalic, and peraluminous rocks (Fig. DR1D, E, F).

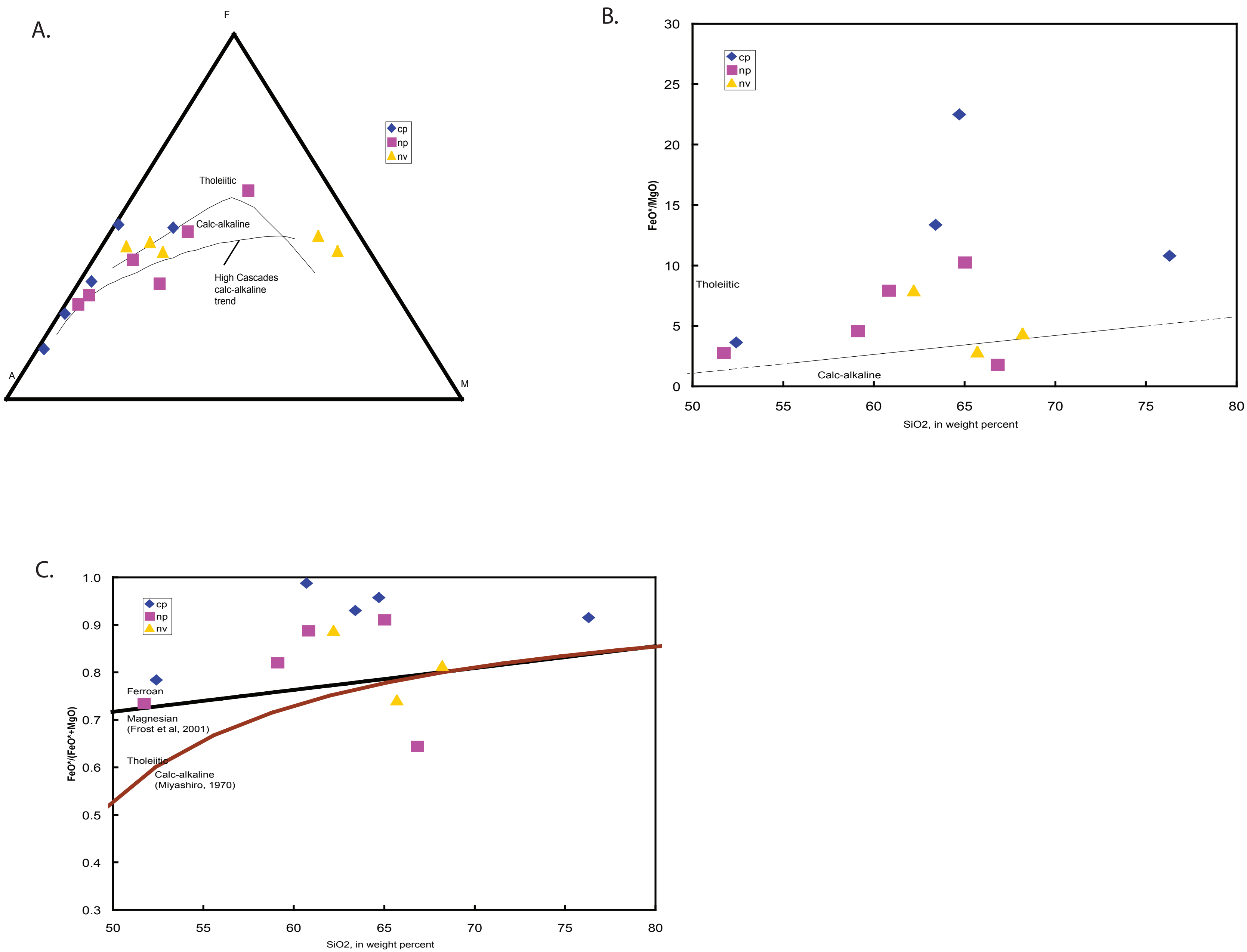
Table DR1. Locations for geochemical and geochronologic samples

Sample Number	Plutonic Suite, Composition	Latitude	Longitude
2KE085A	Ramey Ridge, syenite-quartz syenite	45^{o}13'33"N	115^{o}15'15"W
3KE036A	Ramey Ridge, syenodiorite	45^{o}13'38"N	115^{o}17'05"W
3KE036B	Ramey Ridge, syenite	45^{o}13'38"N	115^{o}17'05"W
91KL105A	Acorn Butte, syenite	45^{o}11'55"N	115^{o}04'18"W
91KL105B	Acorn Butte, syenodiorite	45^{o}11'55"N	115^{o}04'18"W
01KL090A	Rush Creek Point, quartz syenite	45^{o}08'47"N	114^{o}55'21"W
3KE047A	Yellowjacket, syenite	44^{o}58'14"N	114^{o}38'18"W
3KE051A	Yellowjacket, syenite	44^{o}57'45"N	114^{o}32'14"W
05KL022	Deep Creek, syenodiorite	44^{o}08'17"N	114^{o}13'02"W
03KL070	Arnett Creek, syenite	45^{o}12'48"N	114^{o}09'11"W
99KL074	Beaverhead, syenogranite	44^{o}27'58"N	113^{o}00'32"W
3KE043A	Acorn Butte, syenite	44^{o}10'48"N	115^{o}04'31"W
3KE044A	Rush Creek Point, syenite	45^{o}05'51"N	114^{o}56'04"W
99KL075	Beaverhead, syenogranite	44^{o}42'49"N	113^{o}16'09"W
SRM-238	Deep Creek, syenite	45^{o}08'20"N	114^{o}12'38"W
DG1	tuff of Daugherty Gulch	44^{o}29'09"N	114^{o}19'54"W
3KL045	Metabasalt	45^{o}09'30"N	115^{o}21'42"W
99KL027	Metabasalt	45^{o}09'03"N	115^{o}21'20"W
2KE084	Trachydacite tuff	45^{o}07'50"N	115^{o}19'13"W
98KL021	Trachydacite tuff	45^{o}09'03"N	115^{o}20'46"W
00KL040	Trachydacite tuff	45^{o}09'04"N	115^{o}20'40"W

Table DR2. Geochemical data for Cryogenian and Late Cambrian-Early Ordovician syenite-diorite suites and for Cryogenian Edwardsburg Formation volcanic rocks, central Idaho

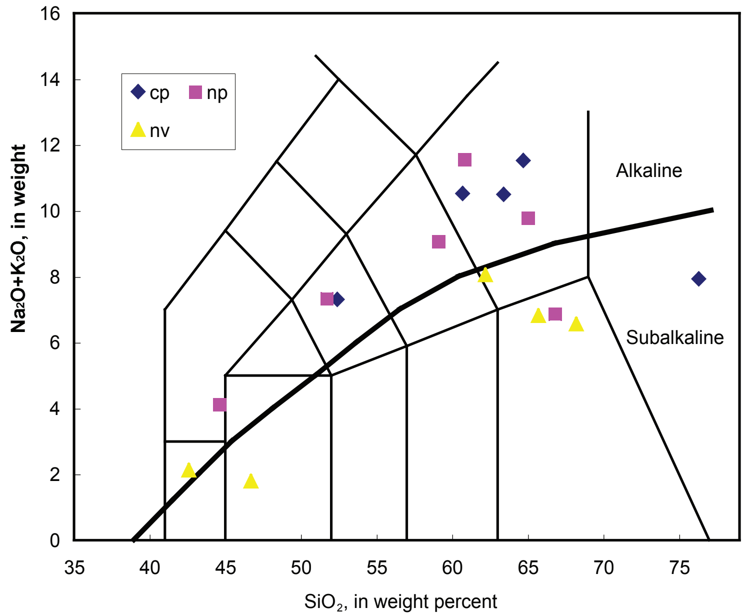
Sample Num	***Rb***	***Sr***	***Nb***	***Ta***	***Yb***	***Y***	***Zr***	***Ba***	La	SiO2	TiO2	Al2O3	FeO*	MnO	MgO	CaO	Na2O	K2O	P2O5	total_I	LOI
Cambrian pluton																					
03KL070	57.3	22.7	90			39.3		246	42	60.7	0.51	14.9	9.81	0.32	0.12	2.06	5.32	5.21	0.16	100.40	0.19
3KE047	65.3	56	83			19.4		375	84.7	64.7	0.38	17.2	3.60	0.09	0.16	0.90	5.33	6.20	0.14	100.20	1.06
3KE051A	62.7	114.5		4.28	2.72	30.5	316	952	86.1	63.4	0.58	16.1	5.21	0.15	0.39	1.67	5.42	5.08	0.2	99.07	0.29
05KL022	54.8	2000	82			34.5		3730	83.2	52.4	1.62	18.5	8.64	0.19	2.38	5.37	4.48	2.83	0.78	99.10	0.94
99KL074										76.3	0.18	12.5	1.30	0.01	0.12	0.04	0.43	7.5	0.05	99.63	1.06
Neoproterozoic pluton																					
2KE085A										59.1	1.29	15.8	6.56	0.22	1.43	2.85	5.26	3.82	0.43	98.18	0.69
2KE036A										51.7	2.75	15.5	9.09	0.19	3.27	5.73	4.81	2.53	0.78	97.87	0.51
2KE036B										65	0.32	16.9	3.60	0.04	0.35	1.31	6.76	3.03	0.05	97.96	0.2
01KL090	155	417	22			21.9		1080	41.3	66.8	0.68	14.8	4.34	0.06	2.39	2.57	2.75	4.13	0.26	100.40	1.12
91KL105A	36.4	203	76			10.4		1150	20.2	60.8	0.63	18.0	4.92	0.15	0.62	1.75	5.45	6.11	0.25	99.80	0.61
91KL105B	57.8	743	130			58.3		849	56.7	44.6	3.82	14.1	12.90	0.24	5.46	10.7	1.72	2.40	0.79	99.30	1.18
Neoproterozoic volcanics																					
99KL021										65.7	1.39	13.9	6.06	0.13	2.11	1.78	4.07	2.75	0.72	99.89	0.61
00KL040	58.8	326.00	73	5.79	3.44	35	487.00	518	65.6	68.2	1.11	13.1	6.03	0.1	1.38	1.03	4.6	1.96	0.05	98.89	0.66
2KE084A										62.2	0.68	15.4	6.42	0.22	0.81	2.07	5.07	2.99	0.16	97.87	1.14
3KL045A										46.7	2.5	8.87	10.35	0.18	13.3	12.4	1.26	0.53	0.32	98.18	0.62
99KL027	8.48	480.00	43	2.59	1.66	20	198.00	89.9	26	42.6	2.26	8.7	10.35	0.21	10.6	15.5	1.94	0.19	0.39	98.81	4.92

Figure DR1

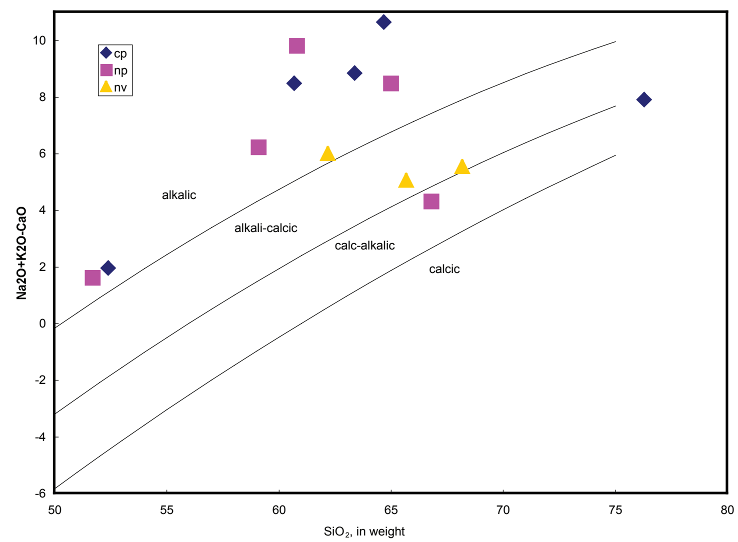


A.
F
A
M
cp
np
nv
Tholeiitic
Calc-alkaline
High Cascades
calc-alkaline
trend
B.
30
25
20
15
10
5
0
50
55
60
65
70
75
80
FeO*/MgO)
SiO2, in weight percent
Tholeiitic
Calc-alkaline
C.
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
FeO*/(FeO*+MgO)
SiO2, in weight percent
Ferroan
Magnesian
(Frost et al, 2001)
Tholeiitic
Calc-alkaline
(Miyashiro, 1970)

D.


cp
np
nv
Alkaline
Subalkaline
Na2O+K2O, in weight
SiO2, in weight percent

E.


cp
np
nv
alkalic
alkali-calcic
calc-alkalic
calcic
Na2O+K2O-CaO
SiO2, in weight

F.

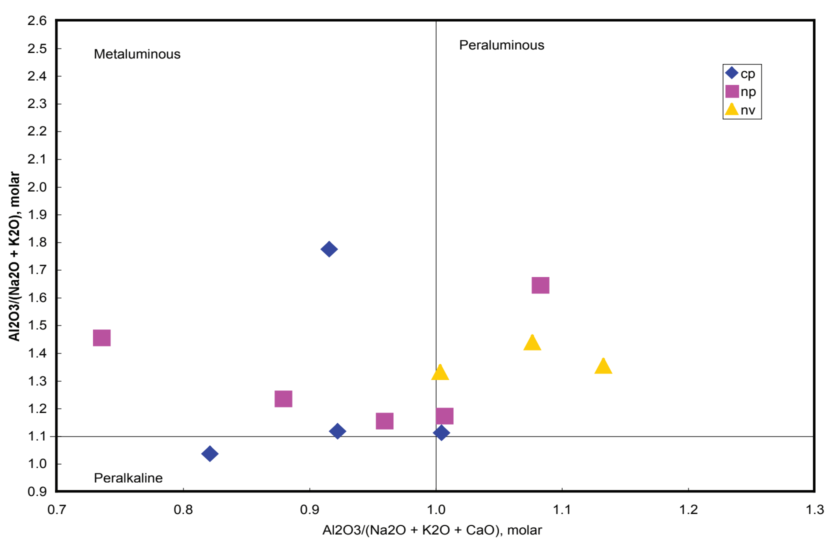

Metaluminous
Peraluminous
Peralkaline
cp
np
nv
Al2O3/(Na2O + K2O), molar
Al2O3/(Na2O + K2O + CaO), molar

Figure DR1 (continued)

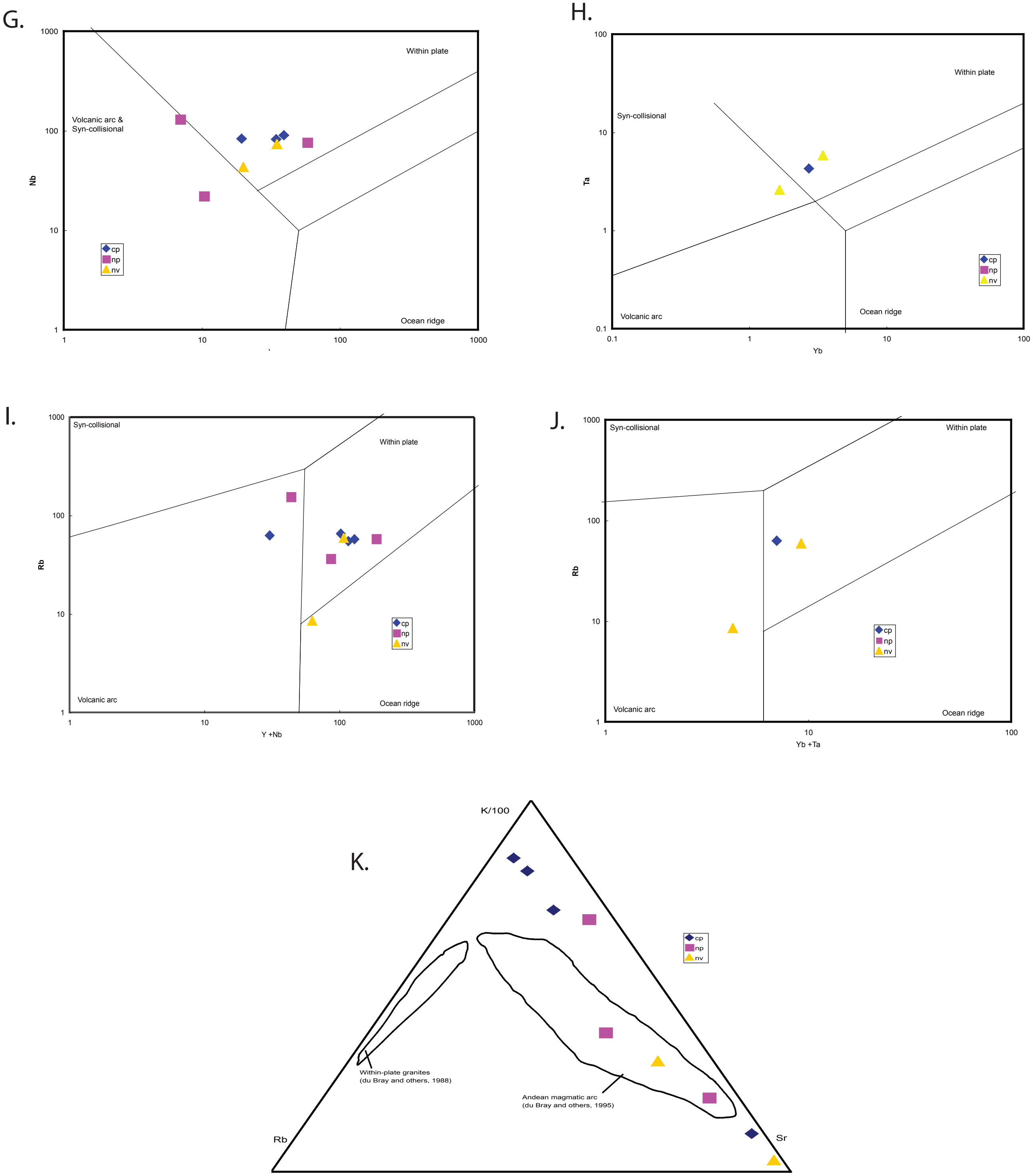


Table DR3. TIMS U-Pb data for zircon from Cryogenian and Cambrian suites, central Idaho.

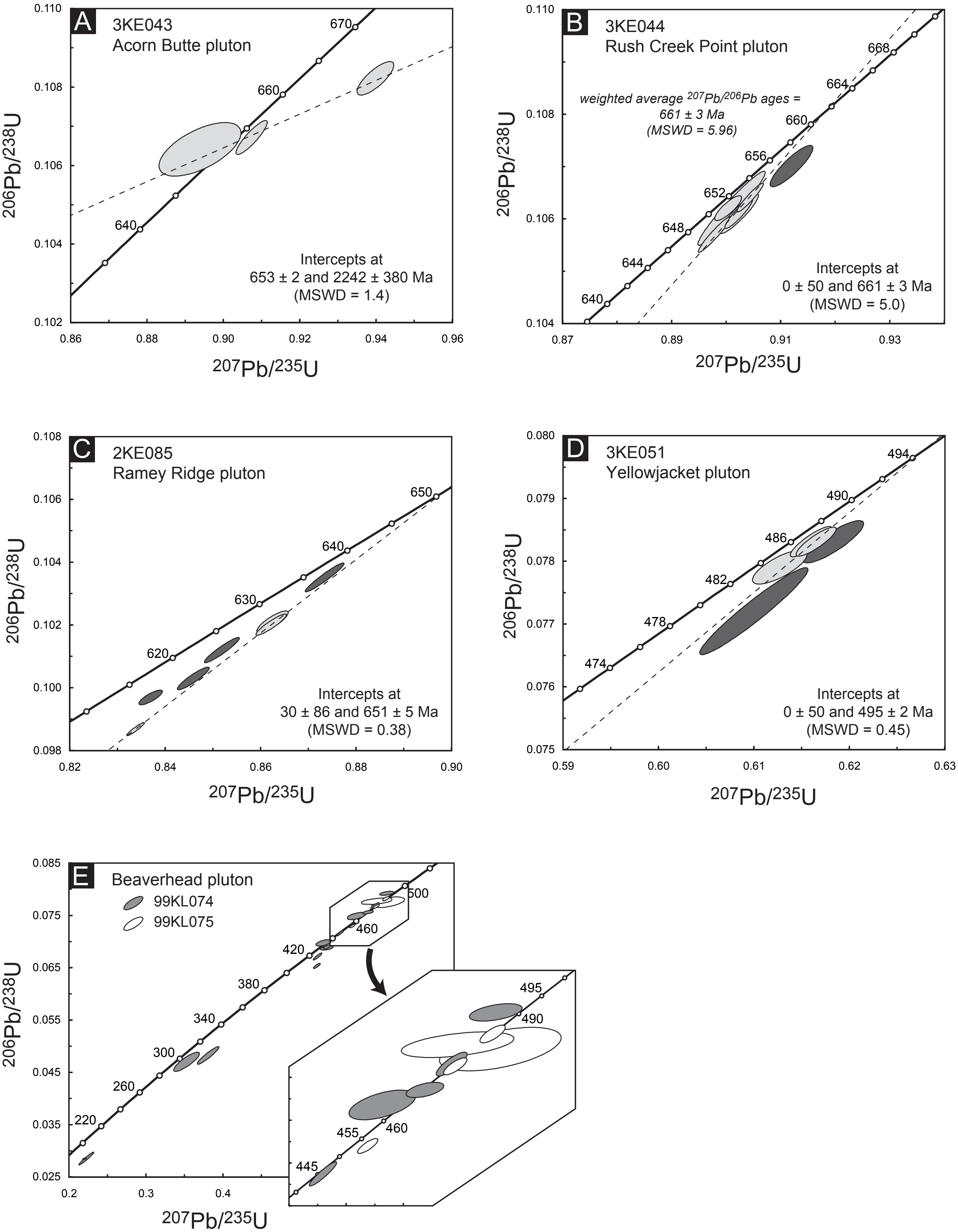
analysis[1]	Weight (mg)	Concentrations (ppm)		measured	Pb composition[2]			Ratios (percent error)[3]			Ages (Ma)[4]			
		U	Pb	$^{206}Pb/^{204}Pb$	$^{206}Pb/^{204}Pb$	$^{206}Pb/^{207}Pb$	$^{206}Pb/^{208}Pb$	$^{206}Pb/^{238}U$	$^{207}Pb/^{235}U$	$^{207}Pb/^{206}Pb$	$^{206}Pb/^{238}U$	$^{207}Pb/^{235}U$	$^{207}Pb/^{206}Pb$	err[3]
3KE043A (Acorn Butte suite)														
1	.056	66.19	7.856	811.80	1487.6	13.757	5.3814	.1082(.32)	.9398(.42)	.0630(.26)	662	673	707	5
2	.067	57.81	7.052	540.65	757.0	12.493	4.5657	.1064(.52)	.8939(.98)	.0609(.78)	652	648	636	17
3	.059	68.71	8.077	848.90	1521.7	14.049	5.1699	.1067(.33)	.9074(.37)	.0617(.17)	654	656	663	4
3KE044A (Rush Creek Point suite)														
1	.029	295.5	41.90	1822.8	3403.5	15.207	2.1038	.1062(.18)	.9004(.22)	.0615(.12)	651	652	657	3
2	.049	226.1	29.63	3044.2	7769.3	15.757	2.6883	.1057(.26)	.8979(.27)	.0616(.08)	648	651	660	2
3	.050	228.0	33.87	600.37	674.49	12.003	2.0644	.1070(.30)	.912(.35)	.0619(.17)	655	658	669	4
4	.019	726.6	104.6	2826.3	4042.6	15.330	2.0095	.1064(.21)	.9044(.22)	.0617(.07)	652	654	662	1
5	.033	157.1	23.18	1001.1	1381.5	13.853	1.9231	.1061(.29)	.9024(.32)	.0617(.13)	650	653	664	3
6	.047	268.7	38.76	882.10	980.32	13.078	2.1172	.1061(.22)	.9023(.23)	.0617(.09)	650	653	664	2
7	.092	299.1	40.21	5718.6	8272.9	15.800	2.4817	.1062(.54)	.9010(.56)	.0615(.15)	651	652	658	3
2KE085A (Ramey Ridge suite)														
Dk1	.023	421.3	49.27	1150.9	1582.7	14.271	3.6115	.0997(.19)	.8370(.24)	.0609(.14)	612	617	636	3
Dk2	.033	360.2	43.64	1516.2	2133.0	14.680	3.3351	.1020(.27)	.8622(.30)	.0613(.12)	626	631	651	3
Lt3	.035	453.2	54.85	1032.2	1209.0	13.651	3.5372	.1021(.27)	.8625(.31)	.0613(.17)	627	631	649	4
Lt4	.028	508.7	59.63	1158.2	1420.5	14.037	3.8986	.1012(.32)	.8519(.35)	.0610(.12)	622	626	641	3
Lt5	.031	482.3	58.81	646.41	715.78	12.289	3.4049	.1003(.29)	.8459(.32)	.0611(.13)	616	622	644	3
Lt6	.059	401.7	47.75	2387.4	3092.1	15.181	3.8502	.1035(.36)	.8734(.38)	.0612(.11)	635	637	646	2
Lt7	.049	511.1	57.72	4693.1	8479.3	15.883	3.8037	.0987(.17)	.8338(.18)	.0613(.06)	607	616	648	1
3KE051A (Yellowjacket suite)														
1	.039	217.1	17.69	1102.6	1755.5	15.255	7.6364	.0783(.35)	.6183(.42)	.0573(.22)	486	489	502	5
3	.047	134.4	13.42	219.69	240.34	8.4824	3.7225	.0772(.73)	.6100(.76)	.0573(.22)	479	484	504	5
4	.034	356.74	30.65	632.80	699.97	12.846	5.8953	.0779(.28)	.6127(.38)	.0570(.25)	484	485	493	6
5	.048	163.9	13.45	1254.9	1820.7	15.368	7.1780	.0783(.24)	.6165(.28)	.0571(.14)	486	488	494	3
6	.050	132.5	10.99	1041.9	1496.7	14.976	6.7125	.0783(.25)	.6160(.29)	.0570(.14)	486	487	493	3

99KL074 (Beaverhead pluton)														
1	.022	346.0	10.91	529	1310	14.941	5.1282	.0286(.45)	.2204(.85)	.0558(.7)	182	202	446	15
2	.006	333.5	10.56	403	2757	16.204	4.6299	.0286(3.4)	.2225(3.6)	.0564(.9)	182	204	470	19
3	.005	706.6	38.71	443	1265	15.165	3.7342	.0470(3.2)	.3527(3.8)	.0544(2.0)	296	307	389	44
4	.015	695.1	38.4	1087	2368	15.785	3.8993	.0482(2.8)	.3806(3.0)	.0572(1.1)	304	327	500	23
5	.026	228.5	16.26	2349	10807	16.838	4.8166	.0652(.61)	.5215(.71)	.0580(.4)	407	426	532	8
6	.003	116.6	10.17	199	1045	14.387	3.8027	.0747(.75)	.5726(1.7)	.0556(1.4)	464	460	436	31
7	.005	474.7	38.35	1578	3962	16.762	4.0521	.0715(.64)	.5519(/70)	.0560(.3)	445	446	452	6
8	.003	186.8	17.32	314	1459	15.114	3.5792	.0790(.42)	.6122(1.2)	.0562(1.1)	490	485	460	24
9	.004	177.1	15.63	212	376	10.646	3.2810	.0696(.71)	.5303(1.5)	.0552(1.2)	434	432	421	28
10	.005	686.3	49.36	2224	6092	16.967	5.4217	.0670(.80)	.5225(.88)	.0566(.4)	418	427	474	8
11	.005	199.5	15.78	609	1864	15.587	3.8772	.0688(.42)	.5345(.69)	.0564(.5)	429	435	467	12
12	.004	255.9	23.14	345	510	11.769	3.8988	.0754(.38)	.5875(.92)	.0565(.8)	469	469	471	17
13	.007	172.6	14.99	995	5807	16.951	3.9443	.0766(.59)	.5968(.74)	.0565(.4)	476	475	472	9
14	.008	297.3	26.94	235	261	8.924	3.2050	.0686(.46)	.5343(1.3)	.0564(1.1)	428	435	470	25
99KL075 (Beaverhead pluton)														
1	.012	319.1	26.66	1510	2506	16.170	5.5203	.0775(.63)	.5989(2.7)	.0560(2.4)	481	477	454	53
2	.009	273.3	22.82	1167	2207	15.580	5.5212	.0773(1.1)	.6138(2.8)	.0576(2.5)	480	486	515	47
3	.006	239.3	20.18	814	1808	15.423	5.6124	.0780(.43)	.6111(.59)	.0568(.4)	484	484	484	9
4	.004	267.7	20.98	1054	8563	17.175	5.2695	.0728(.39)	.5675(.51)	.0565(.3)	453	456	473	7
5	.005	415.0	33.79	1772	13797	17.323	5.6549	.0765(.42)	.5981(.56)	.0567(.4)	475	476	479	8

[Constants: $^{235}\lambda$ = 9.8485 E-10/yr; $^{238}\lambda$ = 1.55125 E-10/yr; $^{238}U/^{235}U$ = 137.88 (Steiger and Jäger, 1977)]

1 All analyses are zircons from the (-100+150 size fraction. Abbreviations: Dk (dark)), Lt (light).
2 Blank (10 pg, ±50%) and fractionation (0.14 ± .03%) corrected. Assumed blank composition is 204:206:207:208: = 1:18.8:15.65:38.65.
3 2σ uncertainties.
4 Common lead corrections from Stacey and Kramers (1975) model.

Figure DR2


A
3KE043
Acorn Butte pluton
Intercepts at
653 ± 2 and 2242 ± 380 Ma
(MSWD = 1.4)
B
3KE044
Rush Creek Point pluton
weighted average 207Pb/206Pb ages =
661 ± 3 Ma
(MSWD = 5.96)
Intercepts at
0 ± 50 and 661 ± 3 Ma
(MSWD = 5.0)
C
2KE085
Ramey Ridge pluton
Intercepts at
30 ± 86 and 651 ± 5 Ma
(MSWD = 0.38)
D
3KE051
Yellowjacket pluton
Intercepts at
0 ± 50 and 495 ± 2 Ma
(MSWD = 0.45)
E
Beaverhead pluton
99KL074
99KL075
206Pb/238U
207Pb/235U

Data Repository Document 2

SHRIMP U-Pb Methods

Zircon was extracted from rock samples weighing about 25 pounds using standard mineral separations techniques, including crushing, pulverizing, Wilfley table, magnetic separator, and heavy liquids. Individual grains were hand picked, mounted in epoxy, ground to about half-thickness to expose internal zones, and polished using 6 µm and 1 µm diamond suspension. All grains were photographed in transmitted and reflected light, and digitally imaged in cathodoluminescence (CL) using a JEOL 5800LV scanning electron microscope. Samples were dated using the U.S. Geological Survey/Stanford University sensitive high resolution ion microprobe-reverse geometry (SHRIMP-RG) following the methods of Williams (1998). SHRIMP analysis consisted of excavating a pit about 25-35 µm in diameter and about 1 µm in depth, using a primary oxygen beam at a current of about 4-6 nA. The magnet cycled through the mass stations 6 times per analysis. Raw data were reduced using Squid 1 (Ludwig, 2001) and plotted using Isoplot 3 (Ludwig, 2003). Instrument fractionation for $^{206}Pb/^{238}U$ ages was corrected using zircon standard R33 (419 ± 1 Ma; Black et al., 2004). Uranium concentrations are estimated to be accurate to ±20%. U-Pb data (shown as 2-sigma error ellipses) are plotted on Tera-Wasserburg concordia plots to visually identify coherent age groups and outliers. Weighted averages of selected individual $^{206}Pb/^{238}U$ ages (shown as 2-sigma error bars) are calculated to obtain an age for each sample. Outliers were rejected by an enabled statistical routine within Isoplot 3. Calculated ages are reported with 95% confidence. Errors of the weighted mean of standard analyses (2-sigma error of the mean and the 2-sigma external spot-to-spot uncertainty) are calculated by Squid 1 and are propagated to determine the total error in the age of each sample.

Table DR4. SHRIMP U-Th-Pb data for zircon from Cryogenian and Cambrian suites, central Idaho.

sample[1] (location)	measured $^{204}Pb/^{206}Pb$	measured $^{207}Pb/^{206}Pb$	% common ^{206}Pb	U (ppm)	Th/U	$^{206}Pb/^{238}U$ (Ma)[2]	err[3] (Ma)	$^{207}Pb/^{206}Pb$ (Ma)[2]	err[3] (Ma)	$^{238}U/^{206}Pb$[4]	err[3] (%)	$^{207}Pb/^{206}Pb$[4]	err[3] (%)
DG1 (tuffaceous matrix, core sample) 45º13'33"N; 115º15'15"W													
DG1-1.1	---	.0627	0.14	133	0.45	656.0	8.5	697	62	9.32	1.3	.0627	2.9
DG1-2.1	---	.0600	---	51	0.42	646.8	11.9	605	103	9.49	1.9	.0600	4.8
DG1-3.1	---	.0635	0.22	312	0.45	664.9	7.4	726	48	9.18	1.1	.0635	2.3
DG1-4.1	---	.0623	0.09	378	0.54	660.0	6.8	685	37	9.27	1.1	.0623	1.8
DG1-5.1	0.000160	.0640	0.27	341	0.90	668.0	7.3	664	50	9.16	1.1	.0617	2.3
DG1-6.1	---	.0617	0.07	135	0.62	643.2	8.6	664	64	9.52	1.4	.0617	3.0
DG1-7.1	---	.0623	0.04	316	0.62	673.8	7.2	685	42	9.07	1.1	.0623	2.0
DG1-8.1	0.000457	.0596	---	60	0.58	657.1	11.8	323	186	9.42	1.9	.0529	8.2
DG1-9.1	---	.0655	0.50	96	0.51	654.0	11.6	790	70	9.32	1.8	.0655	3.3
DG1-10.1	---	.0613	---	122	0.66	679.4	9.2	651	66	9.01	1.4	.0613	3.1
DG1-11.1	---	.0604	---	108	0.74	663.8	9.4	619	96	9.23	1.4	.0604	4.4
DG1-12.1	0.000251	.0651	0.43	112	0.53	660.1	9.5	655	98	9.28	1.5	.0615	4.6
DG1-13.1	---	.0605	---	108	0.75	663.2	9.6	621	74	9.24	1.5	.0605	3.4
DG1-14.1	---	.0587	---	73	0.52	662.1	21.7	556	90	9.28	3.4	.0587	4.1
DG1-15.1	---	.0766	0.07	134	0.56	1095.7	13.6	1112	41	5.39	1.3	.0766	2.0
DG1-16.1	0.000424	.0679	0.74	94	0.49	668.2	10.1	667	142	9.16	1.6	.0618	6.6
3KE043A (Acorn Butte suite) 44º10'48"N; 115º04'31"W													
3KE043-1.1r	---	.0649	0.32	9	0.29	683.0	37.4	772	250	8.92	5.6	.0649	11.9
3KE043-1.2r	0.000407	.0620	0.11	54	0.50	640.4	11.1	453	167	9.63	1.8	.0560	7.5
3KE043-2.1c	0.000284	.0620	0.05	133	0.71	661.7	8.5	526	93	9.29	1.3	.0579	4.2
3KE043-3.1c	---	.0658	0.34	49	0.69	709.2	12.8	800	83	8.57	1.8	.0658	4.0
3KE043-4.1c	---	.0603	---	108	0.57	674.3	8.9	614	59	9.09	1.4	.0603	2.7
3KE043-5.1c	---	.0669	0.67	27	0.50	653.0	22.0	834	111	9.32	3.4	.0669	5.3
3KE043-7.1c	0.000567	.0656	0.43	35	0.52	678.8	14.2	506	210	9.06	2.2	.0574	9.6
3KE043-8.1r	0.001336	.0701	1.11	17	0.44	639.0	19.1	216	552	9.72	3.3	.0505	23.8
3KE043-9.1r	---	.0644	0.47	17	0.28	621.2	18.0	753	146	9.84	2.9	.0644	6.9
3KE043-10.1c	0.000075	.0610	---	240	0.45	665.3	6.9	601	44	9.22	1.1	.0599	2.0
3KE043-11.1c	0.000114	.0605	---	248	0.47	666.8	7.2	561	46	9.21	1.1	.0588	2.1
3KE043-12.1c	---	.0696	0.97	29	0.47	661.5	14.9	916	103	9.16	2.3	.0696	5.0
3KE043-13.1m?	---	.0621	0.15	80	0.54	637.6	9.4	679	67	9.60	1.5	.0621	3.1
3KE043-14.1c	---	.0615	0.01	167	0.52	653.5	12.4	655	48	9.37	1.9	.0615	2.2
3KE043-16.1c	---	.0605	---	106	0.61	662.1	12.0	621	58	9.26	1.9	.0605	2.7
3KE043-17.1c	0.000052	.0613	---	320	0.91	664.8	6.5	622	36	9.22	1.0	.0605	1.7
3KE043-18.1r	0.000588	.0627	0.21	37	0.51	637.1	12.7	375	240	9.71	2.1	.0541	10.7

3KE044A (Rush Creek Point suite) 45º05'51"N; 114º56'04"W

3KE044-1.1	---	.0584	---	146	1.41	651.0	7.8	544	52	9.44	1.2	.0584	2.4
3KE044-2.1	0.000068	.0617	0.04	472	1.34	650.6	6.0	628	31	9.42	0.9	.0607	1.4
3KE044-3.1	0.000019	.0603	---	781	1.12	646.3	5.5	604	23	9.50	0.9	.0600	1.1
3KE044-4.1	---	.0615	0.06	680	1.36	640.8	5.6	657	24	9.56	0.9	.0615	1.1
3KE044-5.1	0.000064	.0608	---	486	0.74	645.6	5.9	598	40	9.51	0.9	.0598	1.8
3KE044-6.1	---	.0596	---	202	0.84	661.4	7.2	590	43	9.28	1.1	.0596	2.0
3KE044-7.1	---	.0617	0.03	312	1.11	655.8	8.6	663	34	9.34	1.4	.0617	1.6
3KE044-8.1	---	.0647	0.38	80	1.61	657.0	10.4	763	66	9.28	1.6	.0647	3.1
3KE044-9.1	---	.0613	---	605	1.60	659.0	5.8	651	25	9.29	0.9	.0613	1.2
3KE044-10.1	0.000136	.0598	---	119	0.95	660.4	8.5	523	70	9.31	1.3	.0578	3.2
3KE044-11.1	---	.0602	---	257	1.03	648.1	6.8	612	41	9.47	1.1	.0602	1.9

2KE085A (Ramey Ridge suite) 45º13'33"N; 115º15'15"W

2KE085-1.1	0.000079	.0624	0.12	348	0.83	656.1	7.5	650	39	9.34	1.2	.0613	1.8
2KE085-2.1	---	.0615	0.00	454	0.87	655.5	6.0	655	28	9.34	0.9	.0615	1.3
2KE085-3.1	0.000030	.0626	0.16	467	0.87	649.2	6.0	679	32	9.43	0.9	.0621	1.5
2KE085-4.1	---	.0614	0.03	782	0.94	644.9	6.5	652	23	9.50	1.0	.0614	1.0
2KE085-5.1	---	.0623	0.02	582	0.88	678.1	6.5	683	26	9.01	1.0	.0623	1.2
2KE085-6.1	---	.0620	0.05	660	0.87	658.5	5.9	674	26	9.29	0.9	.0620	1.2
2KE085-7.1	0.000052	.0606	---	528	0.77	660.2	6.0	598	30	9.29	0.9	.0598	1.4
2KE085-8.1	---	.0603	---	532	0.84	645.2	6.1	616	29	9.51	1.0	.0603	1.3
2KE085-9.1	0.000034	.0623	0.13	615	0.93	649.5	5.7	668	26	9.43	0.9	.0618	1.2
2KE085-10.1	0.000070	.0626	0.19	280	0.78	641.2	6.6	659	42	9.56	1.1	.0616	2.0
2KE085-11.1	---	.0612	0.07	417	0.83	626.6	13.8	647	32	9.79	2.3	.0612	1.5
2KE085-12.1	0.000124	.0637	0.38	343	0.75	625.9	6.7	671	48	9.79	1.1	.0619	2.2
2KE085-13.1	---	.0617	0.02	957	0.94	656.1	5.5	663	20	9.33	0.9	.0617	0.9
2KE085-14.1	0.000181	.0614	0.02	309	0.80	647.6	6.5	558	47	9.49	1.0	.0588	2.2
2KE085-15.1	---	.0628	0.23	420	0.89	635.0	8.1	701	32	9.64	1.3	.0628	1.5
2KE085-16.1	---	.0611	-0.01	805	0.87	643.6	8.4	642	25	9.53	1.3	.0611	1.1
2KE085-17.1	0.000023	.0612	-0.05	569	1.08	660.2	6.9	635	26	9.28	1.1	.0609	1.2

SRM-238 (Deep Creek suite) 45º08’20”N: 114º12’38”W

SRM238-1.1	0.000369	.0555	-0.21	72	0.42	498.1	10.4	198	85	12.56	2.1	.0501	3.6
SRM238-2.1	0.000136	.0532	-0.51	57	0.67	501.9	9.9	248	88	12.44	2.0	.0512	3.8
SRM238-3.1	0.000267	.0583	0.15	69	0.66	493.7	9.5	387	77	12.61	2.0	.0544	3.4
SRM238-4.1	0.000427	.0588	0.21	45	0.37	493.0	10.0	307	89	12.65	2.1	.0525	3.9
SRM238-5.1	-0.000181	.0586	0.20	42	0.34	490.0	10.0	646	73	12.60	2.1	.0612	3.4
SRM238-6.1	-0.000263	.0595	0.26	60	0.63	506.5	9.9	718	99	12.15	2.0	.0633	4.7
SRM238-7.1	-0.000345	.0567	-0.04	26	0.37	492.9	11.2	664	91	12.51	2.3	.0617	4.3
SRM238-8.1	0.000125	.0560	-0.04	79	0.38	466.9	8.8	379	70	13.35	1.9	.0542	3.1
SRM238-9.1	0.001421	.0577	0.11	17	0.45	485.7	11.4	-593	503	13.10	2.5	.0365	18.5
SRM238-10.1	0.000073	.0553	-0.23	63	0.66	497.0	9.6	379	87	12.52	2.0	.0542	3.9
SRM238-11.1	-0.000302	.0554	-0.23	66	0.65	501.1	9.7	594	62	12.33	2.0	.0597	2.9
SRM238-12.1	0.000180	.0583	0.14	162	0.64	497.7	9.1	440	54	12.48	1.9	.0557	2.4

SRM238-13.1	0.001218	.0523	-0.60	25	0.53	497.3	10.9	-786	561	12.82	2.3	.0340	19.8
SRM238-14.1	0.000203	.0584	0.17	62	0.66	494.6	9.6	431	81	12.56	2.0	.0555	3.6
SRM238-15.1	-0.000363	.0573	0.01	62	0.64	502.2	9.8	694	104	12.26	2.0	.0626	4.9
SRM238-16.1	-0.000334	.0536	-0.46	64	0.66	504.3	9.8	546	114	12.27	2.0	.0584	5.2
SRM238-17.1	-0.000354	.0578	0.08	47	0.65	494.2	10.2	704	130	12.46	2.1	.0629	6.1
SRM238-18.1	---	.0609	0.48	33	0.59	494.5	10.8	637	92	12.48	2.2	.0609	4.3
3KE051A (Yellowjacket suite) 44º57'45"N; 114º32'14"W													
3KE051-1.1	---	.0563	---	236	0.47	491.7	5.4	466	48	12.63	1.1	.0563	2.2
3KE051-2.1	0.000434	.0628	0.72	82	0.43	489.9	7.8	470	169	12.67	1.6	.0564	7.6
3KE051-3.1	0.000231	.0632	0.78	132	0.40	488.2	10.5	599	78	12.66	2.2	.0599	3.6
3KE051-4.1	0.000030	.0572	0.00	782	0.28	500.5	4.4	484	29	12.39	0.9	.0568	1.3
3KE051-5.1	0.000307	.0545	---	83	0.43	493.2	7.6	194	117	12.69	1.6	.0500	5.0
3KE051-6.1	---	.0602	0.43	108	0.58	479.5	6.8	611	70	12.89	1.4	.0602	3.2
3KE051-7.1	0.000248	.0566	---	208	0.47	496.4	5.7	327	89	12.56	1.2	.0529	3.9
3KE051-8.1	0.000090	.0552	---	414	0.36	495.0	5.7	364	52	12.58	1.2	.0538	2.3
3KE051-9.1	---	.0582	0.13	218	0.46	495.1	5.9	536	50	12.51	1.2	.0582	2.3
3KE051-10.1	---	.0597	0.37	238	0.37	480.2	6.4	594	47	12.88	1.3	.0597	2.2
3KE051-11.1	0.000366	.0623	0.71	79	0.43	474.0	7.9	491	146	13.10	1.7	.0570	6.6
3KE051-12.1	---	.0567	---	217	0.50	491.0	5.6	481	52	12.64	1.2	.0567	2.4
3KE051-13.1	---	.0540	---	160	0.51	491.8	6.1	373	61	12.66	1.2	.0540	2.7
3KE051-14.1	---	.0590	0.28	102	0.55	480.8	7.0	567	72	12.88	1.5	.0590	3.3
3KE051-15.1	---	.0554	---	108	0.64	499.3	7.2	430	76	12.44	1.5	.0554	3.4
03KL070 (Arnett Creek suite) 45º12'48"N; 114º09'11"W													
03KL070-1.1	0.000040	.0578	0.15	486	0.65	477.9	8.5	502	26	12.99	1.8	.0573	1.2
03KL070-2.1	-0.000005	.0566	-0.03	750	0.89	486.8	8.7	480	19	12.75	1.8	.0567	0.9
03KL070-3.1	---	.0570	0.02	799	0.79	487.4	8.7	493	18	12.73	1.8	.0570	0.8
03KL070-4.1	---	.0570	0.03	631	0.79	484.4	8.6	493	21	12.81	1.8	.0570	0.9
03KL070-5.1	0.000022	.0567	-0.03	559	0.77	491.0	8.8	469	23	12.64	1.8	.0564	1.0
03KL070-6.1	0.000023	.0563	-0.07	524	0.61	485.7	9.0	450	24	12.79	1.9	.0559	1.1
03KL070-7.1	-0.000005	.0558	-0.15	787	0.87	494.9	8.8	449	19	12.55	1.8	.0559	0.9
03KL070-7.2	0.000031	.0573	0.05	597	0.81	488.1	8.8	488	23	12.71	1.8	.0569	1.1
03KL070-6.2	0.000005	.0579	0.13	579	0.64	486.2	8.7	523	31	12.75	1.8	.0578	1.4
03KL070-8.1	0.000047	.0574	0.09	385	0.65	480.0	8.6	482	31	12.93	1.8	.0568	1.4
03KL070-9.1	0.000018	.0566	-0.01	574	0.73	480.5	8.9	466	24	12.93	1.9	.0563	1.1
03KL070-10.1	-0.000011	.0576	0.14	493	0.79	471.8	8.4	521	24	13.15	1.8	.0578	1.1
03KL070-11.1	0.000019	.0575	0.14	609	0.80	465.2	8.4	499	22	13.35	1.8	.0572	1.0
03KL070-12.1	0.000025	.0560	-0.14	768	0.74	499.4	8.9	439	21	12.44	1.8	.0557	1.0
03KL070-13.1	---	.0573	0.04	679	0.80	488.9	8.7	502	20	12.69	1.8	.0573	0.9
03KL070-14.1	0.000020	.0572	0.03	875	0.74	491.6	8.9	489	18	12.62	1.8	.0569	0.8
99KL075 (Beaverhead pluton) 44º42'49"N; 113º16'09"W													
99KL075-1.1	0.000041	.0563	---	276	0.48	476.9	5.7	440	36	13.04	1.2	.0557	1.6
99KL075-2.1	0.000114	.0566	---	343	0.52	521.9	5.7	411	40	11.90	1.1	.0550	1.8

99KL075-3.1	---	.0575	0.03	393	0.65	501.7	5.8	512	27	12.35	1.2	.0575	1.2
99KL075-4.1	0.000065	.0562	---	263	0.55	491.1	5.4	424	38	12.66	1.1	.0553	1.7
99KL075-5.1	0.000114	.0570	---	289	0.54	522.2	5.7	427	35	11.89	1.1	.0554	1.6
99KL075-6.1	0.000061	.0568	---	275	0.55	489.7	6.3	449	36	12.69	1.3	.0559	1.6
99KL075-7.1	---	.0576	0.07	358	0.55	489.3	5.2	513	28	12.67	1.1	.0576	1.3
99KL075-8.1	0.000092	.0581	0.12	249	0.47	497.4	5.5	482	44	12.47	1.1	.0567	2.0
99KL075-9.1	---	.0556	---	175	0.40	494.1	6.6	503	54	12.55	1.4	.0573	2.5
99KL075-10.1	0.000009	.0569	---	309	0.48	495.1	5.8	483	37	12.53	1.2	.0568	1.7
99KL075-11.1	0.000060	.0587	0.24	245	0.49	485.0	5.4	525	39	12.78	1.1	.0579	1.8
99KL075-12.1	0.000043	.0574	0.09	293	0.47	479.5	5.2	484	34	12.95	1.1	.0568	1.5
99KL075-13.1	---	.0570	0.00	295	0.56	489.7	5.3	491	31	12.67	1.1	.0570	1.4
99KL075-14.1	---	.0559	---	293	0.48	482.8	5.3	497	40	12.85	1.1	.0572	1.8
99KL075-15.1	---	.0576	0.07	383	0.56	493.6	5.9	514	33	12.56	1.2	.0576	1.5

1 All samples analyzed on USGS/Stanford ion microprobe (SHRIMP-RG). Dates of analyses are: sample DG1 (12/02); samples 3KE043A, 3KE044A, 2KE085A, and 3KE051A (1/03); samples SRM-238, 03KL070, and 99KL075 (11/03). Abbreviations: c (core), r (rim), m (mixture).

2 $^{206}Pb/^{238}U$ ages corrected for common Pb using the ^{207}Pb-correction method; $^{207}Pb/^{206}Pb$ ages corrected for common Pb using the ^{204}Pb-correction method. Decay constants from Steiger and Jäger (1977).

3 1-sigma errors.

4 Radiogenic ratios, corrected for common Pb using the ^{204}Pb-correction method, based on the Stacey and Kramers (1975) model.