

Table A-16 Geochemical analysis of rock samples

No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	As (ppm)	Sb (ppm)	Hg (ppb)	Ag (ppm)	Al (%)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)
49	M99NK084R	---	---	Isisvanite	silicification, carbonatized	---	<0.005	2	<0.2	<10	<0.2	0.45	20	<0.5	<2	0.36	<0.5	80	1515	94	4.26	0.09	15.00	540	<1	0.18	1955	80	<2	4	<0.01	14	<10	14
70	M99M2012M	Khokhoo	20b	Pb-Cu ore	---	galena, malachite	0.010	8	1.0	220	23.2	0.40	280	<0.5	2	0.01	<1	<1	7	1135	1.09	0.18	0.04	50	<1	0.02	3	60	5210	42	0.01	10	<10	272
71	M99M2013R	Khokhoo	20b	silicified rock	hydrothermal?	---	<0.005	<1	<0.2	<10	0.2	6.00	760	1.0	<2	0.16	<0.5	1	7	8	0.30	0.82	0.06	45	<1	3.68	3	150	86	207	0.03	1	<10	32
120	M99RK008R	Khokhoo	20b	quartz vein	weak limonite	---	<0.005	<1	<0.2	<10	<0.2	0.70	90	<0.5	<2	0.15	<0.5	1	17	<1	0.28	0.41	0.23	110	<1	0.06	16	80	2	12	0.02	8	<10	10
121	M99RK009R	Khokhoo	20b	quartz vein	weak limonite/hematite	---	<0.005	<1	<0.2	<10	<0.2	0.18	810	<0.5	<2	0.03	<0.5	<1	15	<1	0.06	0.11	0.02	20	<1	0.04	2	10	<2	7	<0.01	1	<10	2
122	M99RK010R	Khokhoo	20b	float, granitic?	silicification, weak limonite, greisen? (biotite-mica)	---	<0.005	<1	<0.2	<10	<0.2	7.10	170	1.5	<2	1.09	<0.5	3	9	1	0.56	0.78	0.19	160	<1	3.56	3	140	16	200	0.07	7	<10	20
123	M99RK011R	Khokhoo	20c	quartz vein?	greisen? (biotite-muscovite)	---	<0.005	<1	<0.2	<10	<0.2	5.74	450	0.5	<2	0.98	<0.5	7	33	<1	1.92	1.19	0.76	375	<1	1.74	18	520	14	169	0.21	45	<10	46
69	M99M2011M	Khokhoo	20d	Cu ore	---	malachite, chalcopyrite	0.005	<1	2.0	30	44.2	1.99	380	<0.5	<2	0.05	6.5	6	12	7950	3.51	0.27	0.10	195	2	0.05	14	220	111000	341	0.06	35	<10	38
25	M99NK027R	Khokhoo	20d	andesite	---	sulfide(not identified)	<0.005	<1	<0.2	<10	0.2	7.44	1960	1.5	<2	4.95	<0.5	30	90	<1	5.20	1.66	2.58	990	1	2.67	76	4060	38	901	0.70	122	<10	130
129	M99RK017R	South Camp	25a	quartz vein	weak limonite	---	0.035	1	<0.2	<10	1.0	1.47	40	<0.5	<2	0.23	<0.5	<1	7	<1	0.24	0.18	0.10	20	<1	1.06	1	40	28	25	<0.01	1	<10	4
72	M99M2014R	South Camp	25c	quartz	---	---	<0.005	1	<0.2	<10	<0.2	0.46	100	<0.5	<2	0.1	<0.5	105	1675	4	5.28	0.06	15.00	485	<1	0.14	2230	70	26	<1	<0.01	10	<10	30
26	M99NK030R	South Camp	25d	Isisvanite	---	---	<0.005	1	<0.2	<10	0.2	0.24	10	<0.5	<2	0.07	<0.5	111	1420	<1	4.18	0.02	>15.00	610	<1	0.10	2240	50	<2	<1	<0.01	10	<10	18
27	M99NK031R	South Camp	25d	Isisvanite	---	---	<0.005	5	<0.2	<10	<0.2	0.19	10	<0.5	<2	0.72	<0.5	72	892	6	3.34	0.01	>15.00	930	<1	0.09	1445	50	<2	51	<0.01	3	<10	10
130	M99NK018R	South Camp	25e	float, quartz vein	weak limonite	---	<0.005	1	<0.2	<10	<0.2	0.36	30	<0.5	<2	15.15	<0.5	1	11	14	0.32	0.1	0.12	565	<1	0.09	9	100	4	974	0.01	4	<10	4
131	M99RK019R	South Camp	25e	quartz vein	fluorite	---	<0.005	<1	<0.2	<10	<0.2	0.10	10	<0.5	<2	16.75	<0.5	<1	9	8	0.08	0.02	0.05	650	<1	0.04	2	30	<2	1045	<0.01	1	<10	<2
52	M99H025R	Bulgau	Aguit	altered rock	quartz+sericite	---	<0.005	14	0.2	<10	9.0	7.44	870	1.5	<2	0.03	<0.5	<1	2	8	1.64	3.27	0.28	150	45	0.19	<1	100	98	67	0.31	44	<10	38
53	M99H026R	Bulgau	Aguit	silicified rock	quartz, hematite, limonite	---	0.015	24	0.6	<10	7.4	7.03	820	2.5	<2	0.35	<0.5	2	3	30	2.45	3.21	0.30	410	2	0.23	<1	1600	48	58	0.30	26	<10	172
45	M99NK073R	Bulgau West	Aguit	breccia	intense silicification	---	<0.005	1	0.2	<10	<0.2	6.06	880	1.5	<2	0.37	<0.5	3	14	4	0.71	2.96	0.15	225	1	2.54	2	120	16	150	0.09	8	<10	26
47	M99NK081R	Bulgau West	Aguit	quartz vein	---	pyrite	0.010	1	0.4	<10	4.2	0.62	210	<0.5	<2	0.15	<0.5	<1	15	37	0.83	0.26	0.03	1040	3	0.02	<1	320	486	81	0.05	6	<10	36
50	M99H003M	Aligana gol	Aligana gol	quartz	---	molybdenite	<0.005	<1	<0.2	<10	<0.2	6.30	270	2.0	<2	0.12	<0.5	<1	8	26	0.19	4.1	0.10	10	320	2.29	8	<10	12	36	0.05	4	<10	2
66	M99M2008M	Aligana gol	Aligana gol	quartz veins	---	molybdenite	<0.005	<1	<0.2	<10	<0.2	0.05	<10	<0.5	<2	0.03	<0.5	<1	18	<1	0.08	0.03	<0.01	5	12	0.03	<1	60	<2	5	<0.01	<1	<10	2

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No.	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	As (ppm)	Sb (ppm)	Hg (ppb)	Ag (ppm)	Al (%)	Ba (ppm)	Be (ppm)	Br (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)	Zr (ppm)
22	M99NK022M	Murun South	Donhor bulag	quartz vein	---	---	<0.005	4	<0.2	<10	1.0	1.75	140	1.0	2	0.11	<0.5	3	12	6	2.94	0.97	0.02	1055	6	0.70	<1	500	702	55	<0.05	3	<10	74	
23	M99NK023R	Murun South	Donhor bulag	hydrothermal breccia	silicification	---	<0.005	3	<0.2	<10	<0.2	5.68	30	27.5	<2	0.05	<0.5	1	6	<1	2.83	2.5	0.08	345	<1	2.71	<1	140	26	23	0.21	<1	<10	148	
24	M99NK024M	Altiana gol	Altiana gol	quartz vein	---	molysdenite?	<0.005	4	<0.2	<10	<0.2	0.05	<10	<0.5	<2	<0.01	<0.5	<1	7	<1	0.03	0.03	<0.01	5	1	0.03	<1	10	<2	<1	<0.01	<1	<10	2	
25	M99NK027R	Khokhoo	20	andesite	---	sulfide(not identified)	<0.005	<1	<0.2	<10	0.2	7.44	1960	1.5	<2	4.95	<0.5	30	90	<1	5.20	1.66	2.58	990	1	2.67	76	4060	38	901	0.70	122	<10	130	
26	M99NK030R	South Camp	256	lavaselite	---	---	<0.005	1	<0.2	<10	0.2	0.24	10	<0.5	<2	0.07	<0.5	111	1420	<1	4.18	0.02	>15.00	610	<1	0.10	2540	50	<2	<1	<0.01	10	<10	38	
27	M99NK031R	South Camp	256	lilaswenite	---	---	<0.005	5	<0.2	<10	<0.2	0.19	10	<0.5	<2	0.72	<0.5	72	892	6	3.34	0.01	>15.00	930	<1	0.09	1445	50	<2	51	<0.01	3	<10	10	
28	M99NK032R	Erdnet	Mogoin gol	quartzite gravel	---	---	<0.005	3	<0.2	<10	0.2	0.10	10	<0.5	<2	0.2	<0.5	<1	20	8	0.08	0.01	0.08	80	1	0.04	9	20	<2	12	<0.01	3	<10	<2	
29	M99NK034R	Erdnet	Mogoin gol	granite	quartz, sericite, limonite	---	<0.005	2	0.2	<10	0.2	6.91	490	<0.5	<2	0.05	<0.5	1	10	5	3.52	0.14	0.02	15	1	0.12	1	1160	26	669	0.07	34	<10	2	
30	M99NK035R	Erdnet	Mogoin gol	granite	quartz, limonite	---	<0.005	<1	<0.2	<10	<0.2	0.09	20	<0.5	<2	<0.01	<0.5	<1	3	1	0.22	0.03	<0.01	<5	3	0.01	<1	10	<2	7	0.11	10	<10	<2	
31	M99NK036R	Erdnet	Mogoin gol	granite	quartz, limonite	---	<0.005	4	<0.2	<10	<0.2	0.05	10	<0.5	<2	<0.01	<0.5	<1	4	<1	0.16	0.01	<0.01	<5	2	<0.01	<1	<10	<2	5	0.05	6	<10	<2	
32	M99NK037R	Erdnet	Mogoin gol	granite	quartz, limonite	---	<0.005	3	<0.2	<10	<0.2	0.05	10	<0.5	<2	<0.01	<0.5	<1	5	<1	0.22	0.01	<0.01	<5	<1	0.01	<1	10	<2	6	0.08	7	<10	<2	
33	M99NK038R	Erdnet	Talbulag	tuff breccia	silicification	---	<0.005	8	0.4	30	0.2	3.44	680	<0.5	<2	0.03	<0.5	<1	55	6	1.93	0.82	0.01	10	4	0.46	1	570	18	463	0.50	65	<10	<2	
34	M99NK041R	Erdnet	Talbulag	silicified rock	silicification	---	<0.005	6	<0.2	<10	<0.2	0.33	190	0.5	<2	0.01	<0.5	<1	20	6	0.74	0.11	0.01	5	2	0.04	<1	150	<2	82	0.22	9	<10	<2	
35	M99NK046R	Erdnet	Talbulag	silicified rock	silicification	---	<0.005	5	<0.2	<10	<0.2	6.75	730	1.0	<2	1.09	<0.5	<1	11	3	0.72	2.05	0.09	530	<1	3.42	<1	150	12	343	0.10	9	<10	34	
36	M99NK048R	Erdnet	SARI38	granite	---	malachite	<0.005	<1	<0.2	<10	1.2	8.00	90	1.5	<2	1.48	<0.5	13	22	1560	1.95	0.35	0.86	590	<1	5.01	13	920	66	924	0.31	65	<10	170	
37	M99NK053R	Erdnet	SARI39	quartz-epidote vein	epidote	---	<0.005	<1	0.4	<10	<0.2	7.71	30	0.5	<2	9.61	<0.5	6	27	8	5.60	0.09	0.65	1900	<1	0.23	5	780	14	1420	0.37	135	<10	28	
38	M99NK056M	Erdnet	SARI39	ore	epidote, silicification	malachite, chalcopyrite, pyrite	0.110	5	0.2	<10	13.2	5.95	120	0.5	---	6.93	<0.5	18	26	20700	6.82	0.25	1.49	1825	<1	0.51	22	---	18	1540	0.26	157	<10	52	
39	M99NK057M	Erdnet	SARI39	ore	epidote, silicification	malachite, chalcopyrite, pyrite, limonite	0.045	3	<0.2	<10	4.6	7.12	350	0.5	2	4.36	<0.5	15	13	8560	3.83	0.82	1.50	1065	3	2.36	17	1310	10	1190	0.41	114	<10	42	
40	M99NK060R	Erdnet	Tourmaline	quartz-tourmaline vein	---	---	<0.005	3	0.2	<10	<0.2	7.02	1020	0.5	<2	0.13	<0.5	1	9	47	1.72	3.64	0.27	75	<1	1.82	1	260	28	108	0.07	32	<10	26	
41	M99NK064R	Erdnet	SARI38	basalt	epidote, quartz	---	<0.005	3	0.2	<10	0.2	8.85	120	0.5	<2	5.02	<0.5	17	17	4	5.27	0.48	2.38	875	<1	3.71	13	680	6	713	0.65	214	<10	66	
42	M99NK068R	Erdnet	Danbaiseren	quartz-epidote vein	---	---	<0.005	<1	<0.2	<10	0.6	8.62	50	1.0	<2	6.67	<0.5	13	79	22	3.58	0.18	0.63	665	<1	2.60	28	1550	22	1990	0.47	186	<10	42	

Table A-16 Geochemical analysis of rock samples

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No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	Ag (ppm)	Hg (ppm)	Sb (ppm)	As (ppm)	Cu (ppm)	Fe (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)									
153	M99RK050R	Bulgan West	Ereem ibter	lapilli tuff	moderate silicification, limonite, calcite stain	--	<0.005	19	0.4	<10	<0.2	6.54	900	1.5	<2	0.87	<0.5	2	3	3	1.21	6.79	0.08	155	<1	0.28	<1	560	12	81	0.27	15	<10	46
154	M99RK051R	Bulgan West	Ereem ibter	lapilli tuff	silicification, white, sericite, limonite	--	<0.005	187	0.8	130	<0.2	7.43	640	1.5	<2	0.05	<0.5	2	2	1	1.81	7.86	0.02	170	7	0.73	<1	340	50	86	0.33	23	<10	24
60	M99M2002R	Ubulan	Gua ulaan uul	silicified rock	silicification	limonite	<0.005	6	<0.2	<10	<0.2	6.69	110	5.5	<2	0.07	<0.5	2	<1	3	3.58	3.86	0.05	1475	<1	2.83	<1	340	34	43	0.26	4	<10	276
61	M99M2003R	Ubulan	Gua ulaan uul	dacite	silicification	Fe-Mn oxides	<0.005	5	<0.2	10	<0.2	6.03	380	5.5	<2	0.13	<0.5	4	13	3	3.85	3.41	0.03	1220	<1	2.12	2	540	58	49	0.27	10	<10	252
16	M99NK016R	Ubulan	Gua ulaan uul	breccia	silicification	--	0.010	73	2.2	<10	2.2	4.29	180	5.0	<2	0.28	<0.5	1	1	6	3.61	4.13	0.06	175	109	0.47	<1	360	64	100	0.25	5	<10	144
113	M99RK001R	Ubulan	Gua ulaan uul	float, tuff breccia	white, reddish, sude, alteration, kaolin, limonite, weak silicification	--	<0.005	4	<0.2	10	1.0	7.08	810	3.0	<2	0.08	<0.5	1	4	13	0.70	4.97	0.06	75	36	2.71	<1	190	38	69	0.21	15	<10	14
14	M99NK014R	Ubulan	Holboo овоо	andesite	pyroxene stain	--	<0.005	11	0.2	<10	<0.2	8.59	1490	1.5	<2	5.97	<0.5	15	10	7	3.68	2.8	1.39	2510	<1	2.80	10	1540	48	1355	0.54	128	<10	168
68	M99M2010R	Khokhoо	Hurnii гол	granite	---	--	<0.005	4	<0.2	<10	<0.2	6.93	1030	1.5	<2	0.67	<0.5	1	9	<1	0.73	3.78	0.20	100	<1	2.52	10	90	28	204	0.07	7	<10	14
54	M99HH032R	Bulgan	Jasin buuts	andesite	weakly silicified	--	<0.005	1	0.2	<10	<0.2	7.75	2180	1.5	<2	1.33	<0.5	4	1	<1	2.68	4.05	0.59	915	<1	2.95	<1	1080	12	412	0.49	44	<10	76
55	M99HH033R	Bulgan	Jasin buuts	quartz vein	quartz (black streak)	--	<0.005	4	0.2	<10	<0.2	6.08	200	1.0	<2	0.24	<0.5	8	4	17	1.54	0.13	0.52	80	<1	3.32	<1	460	2	189	0.13	25	<10	14
56	M99HH034R	Bulgan	Jasin buuts	dacite or dacitic tuff	quartz-sericite	--	<0.005	7	<0.2	<10	<0.2	7.82	1500	0.5	<2	0.06	<0.5	1	3	<1	0.98	2.61	0.20	135	<1	1.73	1	210	4	63	0.19	12	<10	14
57	M99HH035R	Bulgan	Jasin buuts	altered rock (andesite?)	quartz-sericite	--	<0.005	<1	<0.2	<10	<0.2	7.17	1200	1.0	<2	0.01	<0.5	<1	<1	<1	0.45	3.2	0.27	130	<1	0.22	<1	40	<2	11	0.28	27	<10	10
160	M99RK058R	Bulgan	Jasin buuts	dacite?	white, strong silicification, pyrite rich (limonite), mica	--	<0.005	2	<0.2	<10	<0.2	1.22	190	<0.5	<2	<0.01	<0.5	<1	9	14	0.17	0.54	0.04	5	7	0.07	<1	40	<2	9	0.05	5	<10	2
161	M99RK059R	Bulgan	Jasin buuts	dacite?	white, moderate silicification, pyrite rich (limonite)	--	<0.005	1	<0.2	<10	<0.2	7.63	570	0.5	<2	0.02	<0.5	<1	2	5	0.32	3.88	0.25	45	<1	0.30	<1	40	<2	12	0.17	32	<10	10
162	M99RK060R	Bulgan	Jasin buuts	dacite?	white, silicification, pyrite (limonite)	--	<0.005	12	<0.2	<10	0.2	6.44	440	1.0	<2	1.69	<0.5	4	3	13	1.40	1.52	0.14	185	3	2.82	<1	610	14	476	0.38	45	<10	28
163	M99RK061R	Bulgan	Jasin buuts	dacitic tuff	moderate silicification, pyrite rich, limonite along crack, sericite, mica	--	<0.005	4	<0.2	<10	<0.2	7.18	2610	1.0	<2	0.07	<0.5	1	3	9	1.10	2.96	0.24	75	<1	0.65	<1	160	30	71	0.11	23	<10	18
164	M99RK062R	Bulgan	Jasin buuts	silicified rock	strong silicification, limonite along crack, sericite, mica	--	<0.005	1	<0.2	<10	<0.2	1.62	400	<0.5	<2	0.01	<0.5	<1	15	10	0.17	0.68	0.03	20	<1	0.08	<1	60	6	27	0.14	14	<10	2
102	M99MZ066M	Bulgan	Khar uul	quartz veinlet	epidote	Cu oxide	0.010	7	10.5	290	6.6	9.13	20	1.5	--	13.95	1.5	15	93	13000	4.25	0.13	0.88	480	<1	0.93	43	---	720	160	0.52	260	<10	28
103	M99MZ067M	Bulgan	Khar uul	quartz veinlet	epidote	Cu oxide	<0.005	<1	0.8	50	0.6	8.71	20	1.5	<2	13	<0.5	14	83	1365	2.87	0.12	0.71	465	<1	0.39	33	1070	96	100	0.39	192	<10	28
73	M99MZ019R	Erdenet	Khujiriii гол	granodiorite	potassic alteration?	--	<0.005	8	<0.2	<10	<0.2	8.31	680	2.0	<2	2.65	<0.5	16	49	72	3.88	2.57	1.75	1110	<1	3.14	42	990	62	556	0.30	108	<10	460
74	M99MZ019R	Erdenet	Khujiriii гол	andesite	---	magnetite	<0.005	7	<0.2	<10	<0.2	7.90	1940	2.0	<2	1.84	<0.5	9	10	113	2.89	2.8	0.51	750	<1	2.35	8	680	26	605	0.37	77	<10	62

Table A-16 Geochemical analysis of rock samples

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No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	Ag (ppm)	Sb (ppm)	Hg (ppb)	As (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Si (%)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)								
75	M09NK020R	Erdenei	Khujirtin gol	monzonite	---	---	<0.005	7	0.2	<10	<0.2	8.84	780	4.0	<2	0.68	<0.5	7	12	16	1.91	3.68	0.55	370	<1	3.95	9	5.40	106	378	0.25	38	<10	116
76	M09NK021R	Erdenei	Khujirtin gol	diorite	---	red hematite	<0.005	<1	<0.2	10	<0.2	8.57	650	1.0	<2	3.8	<0.5	22	32	48	5.28	1.47	2.11	1090	<1	3.43	23	1490	14	776	0.65	163	<10	126
132	M09NK022R	Erdenei	Khujirtin gol	fbas, granite	quartz veinlet m(W-3mm), limonite	---	<0.005	19	0.2	<10	<0.2	7.29	560	1.5	<2	1.79	<0.5	11	32	27	3.18	2.56	1.22	855	<1	2.88	11	870	54	534	0.44	94	<10	102
133	M09NK023R	Erdenei	Khujirtin gol	quartz vein	quartz network, fluorite	---	<0.005	1	<0.2	<10	<0.2	2.46	170	0.5	<2	0.15	<0.5	1	4	14	0.37	1.09	0.18	170	<1	1.09	2	140	52	37	0.06	8	<10	200
94	M09NK024R	Erdenei	Mogoin gol	silicified rock	tourmaline*	---	<0.005	7	<0.2	<10	<0.2	6.17	260	0.5	<2	0.19	<0.5	1	4	2	2.67	2.22	0.04	130	<1	1.15	<1	240	18	106	0.10	16	<10	8
15	M09NK025R	Uubulan	Mogoin gol	diorite	---	Cu, Mn oxides	0.085	1	0.2	60	16.2	7.65	40	4.5	10	5.97	1.5	20	2	952	5.54	0.26	0.86	10000	6	0.46	<1	340	1475	886	0.15	43	<10	1055
28	M09NK026R	Erdenei	Mogoin gol	quartzite gravel	---	---	<0.005	3	<0.2	<10	0.2	0.10	10	<0.5	<2	0.2	<0.5	<1	20	8	0.08	0.01	0.08	80	1	0.04	9	20	<2	12	<0.01	3	<10	<2
29	M09NK027R	Erdenei	Mogoin gol	granite	quartz, sericite, limonite	---	<0.005	2	0.2	<10	0.2	6.91	490	<0.5	<2	0.05	<0.5	1	10	5	3.52	0.14	0.02	15	1	0.12	1	1160	26	669	0.07	34	<10	2
30	M09NK028R	Erdenei	Mogoin gol	granite	quartz, limonite	---	<0.005	<1	<0.2	<10	<0.2	0.09	20	<0.5	<2	<0.01	<0.5	<1	3	1	0.22	0.03	<0.01	<5	3	0.01	<1	10	<2	7	0.11	10	<10	<2
31	M09NK029R	Erdenei	Mogoin gol	granite	quartz, limonite	---	<0.005	4	<0.2	<10	<0.2	0.05	10	<0.5	<2	<0.01	<0.5	<1	4	<1	0.16	0.01	<0.01	<5	2	<0.01	<1	<10	<2	5	0.05	6	<10	<2
32	M09NK030R	Erdenei	Mogoin gol	granite	quartz, limonite	---	<0.005	3	<0.2	<10	<0.2	0.05	10	<0.5	<2	<0.01	<0.5	<1	5	<1	0.22	0.01	<0.01	<5	<1	0.01	<1	10	<2	6	0.08	7	<10	<2
112	M09NK031R	Zaamar West	Mt. Eagle North bluff	silicification	silicification	---	<0.005	15	0.4	<10	<0.2	7.68	300	1.5	<2	2.93	<0.5	5	74	25	0.85	1.58	1.91	135	<1	3.20	29	280	4	361	0.49	131	<10	18
171	M09NK032R	Bulgan	Mt. Zain gobauv	white altered rock	weak silicification, weak pyrite dissemination, limonite, kaoline	---	<0.005	6	0.6	<10	0.2	8.93	400	<0.5	<2	0.15	<0.5	<1	6	54	0.42	0.27	0.02	5	<1	0.22	<1	990	30	699	0.38	671	<10	<2
172	M09NK033R	Bulgan	Mt. Zain gobauv	white altered rock	weak silicification, pyrite dissemination, limonite	---	<0.005	13	0.6	150	<0.2	9.04	300	<0.5	<2	0.15	<0.5	1	6	12	1.20	1.46	0.06	5	<1	0.32	<1	610	12	293	0.44	88	<10	6
173	M09NK034R	Bulgan	Mt. Zain gobauv	altered rock	brown, strong limonitization, nonmorillonite?	---	<0.005	55	3.2	30	<0.2	7.35	340	<0.5	<2	0.6	<0.5	2	118	27	5.32	2.27	0.83	110	<1	0.48	5	910	12	280	0.70	159	<10	42
174	M09NK035R	Bulgan	Mt. Zain gobauv	altered rock	brown, strong limonitization	---	<0.005	186	3.4	30	<0.2	5.49	110	<0.5	<2	0.4	<0.5	3	40	84	16.35	1	0.31	25	<1	0.12	<1	910	2	84	0.55	162	<10	12
175	M09NK036R	Bulgan	Mt. Zain gobauv	altered rock	yellow-brown, limonite, weak acid leached	---	<0.005	3	0.4	<10	0.2	2.91	1180	<0.5	<2	0.13	<0.5	<1	14	17	0.99	0.26	0.03	5	<1	0.14	<1	1130	38	952	0.49	43	<10	6
176	M09NK037R	Bulgan	Mt. Zain gobauv	white altered rock	moderate silicification, pyrite dissemination, limonite	---	<0.005	100	0.4	60	<0.2	5.95	570	<0.5	<2	0.26	<0.5	1	22	9	1.12	0.98	0.07	10	<1	0.26	<1	2310	42	1415	0.37	47	<10	2
179	M09NK038R	Bulgan	Mt. Zain gobauv	float, white altered rock	white, kaoline*, weak silicification	---	<0.005	5	1.0	280	0.2	5.20	910	<0.5	<2	0.67	<0.5	<1	33	63	0.43	0.38	0.03	10	<1	0.19	<1	1970	100	1820	0.19	57	<10	2
180	M09NK039R	Bulgan	Mt. Zain gobauv	andesite	weak silicification, epidote, hematite	malachite	<0.005	6	<0.2	<10	4.8	6.83	1320	0.5	<2	2.31	<0.5	19	42	3100	3.46	1.76	1.65	590	<1	2.20	25	1880	6	1030	0.52	104	<10	54
9	M09NK040R	Bulgan SW	Onur honhor	silicified rock	silicification	---	<0.005	4	0.4	<10	<0.2	6.45	250	2.0	<2	0.07	<0.5	3	5	3	1.18	3.44	0.31	140	<1	1.26	3	50	10	64	0.06	4	<10	68

Table A-16 Geochemical analysis of rock samples

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No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	As (ppm)	Sb (ppm)	Hg (ppb)	Ag (ppm)	Al (%)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)
10	M99NK010R	Bulgari SW Otuz hombor		silicified rock	silicification	limonite	<0.005	30	0.6	40	0.8	7.24	660	1.5	<2	0.28	<0.5	3	25	79	4.33	1.72	0.52	75	1	2.50	5	1740	128	462	0.10	86	<10	40
11	M99NK011R	Bulgari SW Otuz hombor		silicified rock	silicification	fine pyrite	<0.005	64	0.4	10	<0.2	4.09	260	1.5	<2	0.11	<0.5	3	23	49	2.98	0.32	0.62	80	6	0.30	37	1090	28	186	0.10	59	<10	54
12	M99NK012R	Bulgari SW Otuz hombor		silicified rock	silicification	Cu oxides	<0.005	35	1.0	50	1.4	7.89	320	2.0	2	0.85	<0.5	5	23	459	3.53	1.75	0.61	85	5	2.35	10	4580	148	404	0.22	95	<10	84
13	M99NK013M	Bulgari SW Otuz hombor		hydrothermal breccia	silicification	fine pyrite	0.015	24	1.2	30	1.6	7.56	590	1.5	<2	0.11	2.5	11	11	94	7.36	2.93	0.60	115	2	0.35	18	1490	166	370	0.14	81	<10	416
119	M99RK007R	Khokhoo	Quartz	float, quartz vein	limonite	--	<0.005	1	<0.2	10	<0.2	0.05	10	<0.5	<2	0.25	<0.5	<1	7	6	0.18	0.01	0.05	190	1	0.03	5	<10	2	4	<0.01	<1	<10	2
124	M99RK012R	Khokhoo	Quartz	float, quartz vein	hematite	--	<0.005	11	<0.2	<10	<0.2	0.14	10	<0.5	<2	0.01	<0.5	<1	7	<1	0.21	0.04	<0.01	30	<1	0.03	<1	40	<2	2	<0.01	1	<10	<2
125	M99RK013R	Khokhoo	Quartz	quartz vein	limonite	molybdenite <sup>a</sup>	<0.005	1	<0.2	<10	<0.2	0.18	40	<0.5	<2	10.5	0.5	<1	4	2	0.24	0.01	0.13	485	<1	0.12	<1	10	2	600	<0.01	1	<10	<2
126	M99RK014R	Khokhoo	Quartz	limestone	strong silicification	--	<0.005	1	<0.2	<10	0.2	0.36	<10	<0.5	2	19.25	<0.5	2	<1	<1	0.29	0.03	12.65	220	<1	0.23	<1	70	70	171	<0.01	<1	<10	40
127	M99RK015R	Khokhoo	Quartz	basalt <sup>b</sup> basic tuff	weak silicification	--	<0.005	1	<0.2	<10	0.2	1.84	<10	<0.5	6	>25.0	0.5	5	4	2	0.98	0.03	1.09	4790	<1	0.85	5	50	26	666	0.05	9	<10	28
128	M99RK016R	Khokhoo	Quartz	limestone	weak silicification	--	<0.005	1	<0.2	<10	<0.2	0.18	10	<0.5	2	19.55	<0.5	2	<1	<1	0.17	0.06	12.75	130	<1	0.09	<1	50	<2	123	0.01	<1	<10	2
59	M99MZ001R	Uubulan	Sarjin handii	dacite	silicification	limonite	<0.005	4	<0.2	<10	<0.2	8.00	1140	2.5	<2	0.22	<0.5	1	3	4	1.35	3.48	0.10	220	<1	3.92	<1	1750	26	190	0.23	15	<10	58
111	M99MZ015R	Zaamar West	SAR M.2	andesite	zeolite, stilite	--	<0.005	<1	<0.2	60	<0.2	7.25	1010	1.5	6	4.64	<0.5	36	193	133	6.34	2.13	2.83	855	<1	3.22	107	3610	14	1095	1.22	193	<10	108
136	M99RK027R	Erdenet	SAR136	aplite	quartz vein	--	<0.005	<1	<0.2	<10	<0.2	5.28	620	0.5	<2	0.93	<0.5	1	3	108	0.57	3.15	0.06	90	<1	1.94	<1	30	4	368	0.04	18	<10	4
36	M99NK048R	Erdenet	SAR138	granite	--	malachite	<0.005	<1	<0.2	<10	1.2	8.00	90	1.5	<2	1.48	<0.5	13	22	1560	1.95	0.35	0.86	590	<1	5.01	13	920	66	924	0.31	65	<10	170
37	M99NK053R	Erdenet	SAR139	quartz-epidote vein	epidote	--	<0.005	<1	0.4	<10	<0.2	7.71	30	0.5	<2	9.61	<0.5	6	27	8	5.60	0.09	0.65	1960	<1	0.23	5	780	14	1420	0.37	135	<10	28
38	M99NK056M	Erdenet	SAR139	ore	epidote silicification	malachite, chalcopyrite, pyrite	0.110	5	0.2	<10	13.2	5.95	120	0.5	--	6.93	<0.5	18	26	20700	6.82	0.25	1.49	1825	<1	0.51	22	--	18	1540	0.26	157	<10	52
39	M99NK057M	Erdenet	SAR139	ore	epidote silicification	malachite, chalcopyrite, pyrite, limonite	0.045	3	<0.2	<10	4.6	7.12	350	0.5	2	4.36	<0.5	15	13	8560	3.83	0.82	1.50	1065	3	2.36	17	1310	10	1190	0.41	114	<10	42
134	M99RK024R	Erdenet	SAR144	silicified rock (granite)	silicification (W-20cm), epidote, quartz vein in, biotite rich	--	<0.005	<1	<0.2	<10	<0.2	8.65	10	1.5	<2	10.45	<0.5	14	14	36	3.68	0.13	1.01	655	<1	0.69	12	940	10	2520	0.44	185	<10	38
135	M99RK025M	Erdenet	SAR144	granite	potassic (K-feldspar-biotite), limonite	malachite along fracture (2-3m)	0.005	<1	<0.2	<10	2.0	8.10	260	0.5	--	4.53	<0.5	48	19	20200	4.67	0.61	1.90	650	15	2.73	37	--	6	1135	0.72	159	<10	180
177	M99RK075M	Bulgari	SAR181	andesite	moderate silicification, epidote, hematite, 1*0.6cm	malachite	<0.005	1	0.2	590	7.8	8.23	30	0.5	--	13.45	<0.5	22	141	13300	4.19	0.1	0.78	435	<1	0.24	59	--	14	248	0.59	137	<10	28
170	M99RK068M	Bulgari	SAR182	epidote vein	silicified, epidote	malachite	0.010	3	0.2	<10	3.4	7.88	30	1.5	<2	9.9	<0.5	12	21	7430	2.84	0.12	0.24	510	<1	0.40	17	740	24	1825	0.27	311	<10	8

Table A-16 Geochemical analysis of rock samples

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No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	Ag (ppm)	Hg (ppb)	As (ppm)	Sb (ppm)	Pb (ppm)	Cd (ppm)	Co (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (%)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)					
168	M99RK066R	Bulgaria	SAR183	float, epidote vein	silicified, epidote, quartz veinlet in	---	<0.005	<0.2	<10	1.0	0.2	<2	8.53	<0.5	10	95	41	4.12	0.22	0.44	740	<1	1.45	27	1730	28	4120	0.59	143	<10	20			
169	M99RK067M	Bulgaria	SAR183	epidote-quartz vein	silicification, epidote	malachite	<0.005	<1	170	8.4	9.50	10	1.5	---	13.2	<0.5	14	38	19100	4.29	0.13	0.18	600	<1	0.27	27	---	62	5110	0.43	180	<10	2	
89	M99M2034R	Erdeneet	SAR188	granodiorite	epidote	---	<0.005	<0.2	<10	8.89	230	0.5	<2	9.83	<0.5	13	23	5	6.01	1.76	0.68	1025	<1	0.33	6	980	12	2810	0.45	208	<10	32		
90	M99M2035R	Erdeneet	SAR188	granitic rock	tourmaline	---	<0.005	0.2	<10	4.78	10	0.5	<2	0.38	<0.5	11	12	7	1.88	0.12	0.48	150	<1	2.41	3	740	96	104	0.29	59	<10	38		
41	M99NK064R	Erdeneet	SAR188	basalt	epidote, quartz	---	<0.005	0.2	<10	8.85	120	0.5	<2	5.02	<0.5	17	17	4	5.27	0.48	2.38	875	<1	3.71	13	680	6	713	0.65	214	<10	66		
48	M99NK082R	Bulgaria	SAR194	andesite	epidote, silicification	malachite	<0.005	<1	100	19.8	9.14	10	4.5	---	14.8	<0.5	12	128	25700	4.81	0.12	0.69	455	<1	0.30	41	---	44	125	0.49	231	<10	<2	
175	M99RK076M	Bulgaria	SAR194	andesite	epidote, silicification, quartz vein (W:3-5cm)	malachite	<0.005	<1	<0.2	10	5.4	8.41	10	1.5	14	14.4	<0.5	21	59	4400	4.54	0.07	1.18	560	<1	0.93	39	1630	12	144	0.50	186	<10	46
104	M99M2068R	Bulgaria	SAR197	quartz veinlet	---	---	<0.005	1	0.4	<10	<0.2	7.09	260	0.5	<2	3.62	<0.5	19	81	110	3.68	0.63	1.70	485	<1	3.89	46	1440	26	851	0.54	134	<10	64
105	M99M2069R	Bulgaria	SAR197	brecciated rock	---	limonite	<0.005	0.2	610	<0.2	8.11	930	1.5	<2	2.64	<0.5	22	34	81	4.09	2.84	1.63	740	<1	3.69	41	3350	42	626	0.67	169	<10	54	
141	M99RK033R	Erdeneet	SAR200	aplite	quartz vein, quartz-magnetite	---	<0.005	2	<0.2	<10	<0.2	3.29	180	2.0	<2	0.09	<0.5	<1	20	34	0.08	2.44	0.02	20	<1	1.05	<1	10	8	76	<0.01	1	<10	<2
108	M99M2072R	Bulgaria	SAR202	quartz veinlet	silicification + epidote	---	<0.005	1	<0.2	<10	<0.2	6.33	40	2.0	<2	8.17	<0.5	13	44	36	3.33	0.11	0.82	525	<1	0.50	34	1520	30	1460	0.49	118	<10	34
109	M99M2073M	Bulgaria	SAR204	quartz veinlet	silicification + epidote	malachite	0.005	1	<0.2	540	4.8	8.18	210	1.5	<2	4.73	<0.5	20	61	7060	3.53	0.49	1.76	705	<1	3.56	48	1870	28	2080	0.61	131	<10	56
110	M99M2074M	Bulgaria	SAR204	quartz veinlet	silicification + epidote	malachite	<0.005	3	<0.2	1050	10.0	8.49	10	1.5	---	10.95	<0.5	9	55	20600	4.05	0.04	0.27	630	<1	0.18	23	---	30	3800	0.51	198	<10	<2
106	M99M2070R	Bulgaria	SAR205	quartz veinlet	silicification + epidote	---	<0.005	4	<0.2	<10	<0.2	7.28	180	3.0	<2	5.82	<0.5	9	4	3	2.79	1	0.62	1055	<1	1.13	3	990	108	2790	0.35	113	<10	32
107	M99M2071R	Bulgaria	SAR205	andesite	silicification + epidote	---	<0.005	<1	<0.2	<10	<0.2	8.92	30	2.0	<2	10.9	<0.5	14	52	12	4.87	0.15	0.48	600	<1	0.31	25	1410	28	1250	0.54	213	<10	32
167	M99RK065R	Bulgaria	SAR219	silicified rock	white, silicified, sericite?	---	<0.005	4	<0.2	<10	<0.2	4.46	230	0.5	<2	0.13	<0.5	2	8	5	0.48	0.99	0.11	195	<1	2.04	1	120	16	37	0.07	16	<10	26
58	M99HH036R	Bulgaria	SAR221	quartz vein	quartz-hematite along fracture	---	<0.005	1	<0.2	<10	0.2	5.06	110	0.5	<2	2.59	<0.5	12	76	79	2.29	0.5	0.97	255	<1	2.63	41	980	4	204	0.33	110	<10	32
165	M99RK063R	Bulgaria	SAR221	silicified rock	silicification, epidote, quartz veinlet	---	<0.005	5	<0.2	<10	<0.2	10.60	20	2.0	<2	13.7	<0.5	16	49	52	3.53	0.16	0.63	505	<1	0.84	24	1040	32	1480	0.40	242	<10	44
166	M99RK064R	Bulgaria	SAR222	andesite	silicification, quartz veinlet in	---	<0.005	4	<0.2	<10	0.2	5.44	580	0.5	<2	0.85	<0.5	2	8	33	0.63	1.6	0.25	190	<1	2.79	<1	390	10	220	0.17	23	<10	28
145	M99RK041R	Erdeneet	SAR233	float, silicified rock	silicification, hematite, chlorite?	---	<0.005	<1	<0.2	<10	<0.2	3.21	10	<0.5	<2	6.56	<0.5	2	14	113	0.45	0.06	0.06	125	1	0.04	1	170	40	19	0.03	26	<10	10
146	M99RK042R	Erdeneet	SAR235	granite	weak silicification (W:10m)	---	<0.005	1	<0.2	<10	<0.2	6.11	450	<0.5	<2	3.03	<0.5	2	5	37	1.41	1.17	0.14	220	<1	2.87	<1	210	4	841	0.14	33	<10	12

Table A-16 Geochemical analysis of rock samples

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No.	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	Ag (ppm)	Sb (ppm)	Hg (ppb)	Al (%)	Si (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Cs (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Si (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)
147	M99R0343R	Erdénet	SAR235	aplite	silicification, chlorite?	---	<0.005	<0.2	<0.2	6.61	40	1.5	<2	0.34	<0.5	<1	3	3	0.22	4.53	0.03	110	<1	2.49	<1	<10	26	29	0.02	1	<10	14		
142	M99R0344R	Erdénet	SAR238	granite	quartz-tourmalin vein in	---	<0.005	<0.2	<0.2	6.22	430	0.5	<2	2.08	<0.5	5	12	16	2.03	2	0.46	450	<1	2.52	6	330	12	281	0.22	54	<10	34		
143	M99R0378R	Erdénet	SAR238	quartz vein	---	---	<0.005	<0.2	<0.2	2.58	100	0.5	<2	0.21	<0.5	<1	11	8	0.26	1.5	0.04	55	<1	1.12	<1	10	2	24	0.03	3	<10	8		
79	M99M2024R	Erdénet	SAR25	granite	---	---	<0.005	<0.2	<0.2	6.24	700	1.0	<2	0.49	<0.5	4	11	12	1.62	3.97	0.19	240	1	2.13	3	210	24	137	0.27	46	<10	26		
80	M99M2025R	Erdénet	SAR25	granodiorite	---	pyrite, limonite	<0.005	<0.2	<0.2	8.79	930	2.0	<2	3.31	<0.5	32	113	42	5.51	2.21	2.95	910	<1	3.27	65	2940	34	1200	0.81	188	<10	102		
144	M99R0399M	Erdénet	Shand	granite	k-feldspier rich weak limonite	malachite along cracks	0.050	<0.2	<0.2	7.26	470	2.0	<2	0.37	<0.5	11	10	9490	3.54	2.41	0.56	375	17	3.60	10	490	198	127	0.23	55	<10	130		
1	M99NK001M	Zaamar	Sudal N177	quartz vein	---	limonite	2.650	309	2.0	30	20.4	30	<0.5	60	0.08	<0.5	8	12	344	15.05	0.09	0.03	165	12	0.06	5	240	44	9	0.01	18	30	18	
2	M99NK002R	Zaamar	Sudal N177	granite	---	---	<0.005	<0.2	<0.2	6.18	560	1.0	<2	0.08	<0.5	1	7	5	0.63	3.24	0.06	25	<1	2.42	<1	270	12	51	0.05	5	<10	6		
3	M99NK003M	Zaamar	Sudal N177	quartz vein	---	---	<0.005	<0.2	<0.2	0.81	40	<0.5	<2	0.03	<0.5	2	10	7	0.17	0.28	0.01	20	<1	0.51	<1	70	<2	7	<0.01	1	<10	<2		
4	M99NK004M	Zaamar	Sudal N177	quartz vein	---	---	<0.005	<0.2	<0.2	0.04	<10	<0.5	<2	<0.01	<0.5	<1	14	<1	0.02	0.03	<0.01	<5	<1	0.01	<1	<10	<2	6	<0.01	<1	<10	<2		
5	M99NK005M	Zaamar	Sudal N177	quartz vein	---	---	<0.005	<0.2	<0.2	0.08	<10	<0.5	<2	0.52	<0.5	<1	15	2	0.14	0.02	0.05	85	1	0.01	1	10	<2	36	<0.01	1	<10	2		
6	M99NK006R	Zaamar	Sudal N177	slate	pyrite dissemination	pyrite	<0.005	48	0.2	<10	4.00	230	0.5	<2	9.52	<0.5	6	44	19	2.44	0.92	0.64	1610	1	1.42	11	600	28	341	0.17	46	<10	38	
77	M99M2022R	Erdénet	Talbulag	diacite	---	---	<0.005	<0.2	<0.2	8.66	880	2.0	<2	2.89	<0.5	21	42	50	3.61	2.7	1.21	650	<1	2.97	29	1130	24	1155	0.51	131	<10	70		
78	M99M2023R	Erdénet	Talbulag	volcanic rock	silicification	quartz veinlet	<0.005	2	0.2	<10	5.99	1330	1.5	<2	0.2	<0.5	1	9	4	0.62	4.11	0.04	260	<1	2.10	1	230	28	158	0.09	10	<10	18	
33	M99NK043R	Erdénet	Talbulag	tuff breccia	silicification	---	<0.005	8	0.4	30	0.2	3.44	680	<0.5	<2	0.03	<0.5	<1	55	6	1.93	0.82	0.01	10	4	0.46	1	570	18	463	0.50	65	<10	<2
34	M99NK045R	Erdénet	Talbulag	silicified rock	silicification	---	<0.005	6	<0.2	<10	0.33	190	0.5	<2	0.01	<0.5	<1	20	6	0.74	0.11	0.01	5	2	0.04	<1	150	<2	82	0.22	9	<10	<2	
35	M99NK046R	Erdénet	Talbulag	silicified rock	silicification	---	<0.005	5	<0.2	<10	6.75	750	1.0	<2	1.09	<0.5	<1	11	3	0.72	2.05	0.09	530	<1	3.42	<1	150	12	343	0.10	9	<10	34	
85	M99M2030R	Erdénet	Tourmaline	granitic rock	tourmaline-biotite	---	<0.005	3	0.4	20	0.2	6.91	510	1.5	<2	0.02	<0.5	<1	11	12	1.06	3.02	0.42	35	1	0.31	<1	260	78	25	0.14	54	<10	18
86	M99M2031R	Erdénet	Tourmaline	syenite	---	---	<0.005	2	0.2	<10	8.03	640	2.0	<2	0.91	<0.5	4	13	9	1.68	3.71	0.32	140	1	3.07	4	390	14	203	0.29	42	<10	54	
87	M99M2032R	Erdénet	Tourmaline	breccia	tourmaline network	---	<0.005	15	0.4	<10	6.32	760	0.5	<2	0.1	<0.5	1	9	12	3.05	2.57	0.27	60	8	2.31	1	460	26	96	0.07	27	<10	26	
88	M99M2033R	Erdénet	Tourmaline	granitic rock	---	pyrite disc	<0.005	1	0.2	30	0.2	7.47	140	0.5	<2	1.88	<0.5	11	11	7	4.30	1.62	0.94	785	<1	3.89	9	600	120	81	0.09	101	<10	82

Table A-16 Geochemical analysis of rock samples

No	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	Ag (ppm)	Hg (ppb)	Pb (ppm)	Bi (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Ph (ppm)	Si (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)								
40	M09NK040R	Erdenei	Tourmaline	quartz+tourmaline vein	---	---	<0.005	3	0.2	<10	<0.2	7.02	1020	0.5	<2	0.13	<0.5	1	9	4.7	1.72	3.64	0.27	75	<1	1.82	1	260	28	108	0.07	3.2	<10	26
81	M09MZ026R	Erdenei	Tsagaan chuluu	silicified rock	---	limonite along cracks	<0.005	8	0.2	<10	<0.2	6.05	750	1.5	<2	0.09	<0.5	<1	7	1	0.45	3.1	0.07	65	1	2.56	<1	80	20	101	0.10	6	<10	12
82	M09MZ027R	Erdenei	Tsagaan chuluu	silica sinter?	---	---	<0.005	14	0.2	<10	<0.2	6.70	650	0.5	<2	0.35	<0.5	<1	4	<1	0.53	3.29	0.02	30	3	3.62	<1	50	6	79	0.12	6	<10	2
98	M09MZ061M	Bulgan	Tsookher meri	quartz vein	sericitic	limonite	0.395	49	61.0	1580	35.2	1.57	70	0.5	6	0.04	5.5	<1	12	89	0.26	0.73	0.08	35	16	0.06	1	40	10100	14	0.01	28	<10	150
99	M09MZ062M	Bulgan	Tsookher meri	quartz vein	sericitic	azurite	6.290	395	900.0	810	554.0	1.07	80	0.5	102	0.02	83.5	1	18	1070	0.22	0.45	0.06	25	3	0.04	<1	50	25900	16	<0.01	6	<10	170
100	M09MZ063R	Bulgan	Tsookher meri	granitic rock	sericitic	---	0.110	15	40.0	40	192.0	5.81	1940	0.5	<2	0.37	1.5	5	11	120	0.79	3.27	0.21	175	<1	1.54	3	210	3600	153	0.08	19	<10	372
101	M09MZ064M	Bulgan	Tsookher meri	quartz vein	sericitic	malachite, azurite, chalcocite?	1.140	792	1000.0	2450	537.0	0.99	110	0.5	200	0.05	167.5	<1	9	1940	0.14	0.42	0.05	15	2	0.03	1	50	130000	30	<0.01	6	<10	306
7	M09NK007R	Zaamar	Uljint ovcio	andesite	pyroxene-skarn	---	<0.005	17	0.2	10	<0.2	7.86	200	0.5	<2	1.19	<0.5	17	197	<1	3.15	1.21	3.04	1090	<1	1.22	180	790	26	249	0.88	173	<10	48
8	M09NK008M	Zaamar	Uljint ovcio	slate	skarnization	magnetite, Ph, chalcocite	<0.005	<1	<0.2	100	0.2	2.33	20	<0.5	<2	0.14	<0.5	176	4	498	22.00	0.18	15.00	3830	<1	0.29	170	300	<2	4	0.06	38	<10	1305
91	M09MZ037R	Erdenei	Under	granodiorite	limonite	---	<0.005	16	0.4	<10	<0.2	7.75	480	1.5	<2	1.56	<0.5	8	17	32	5.99	1.64	0.44	350	<1	4.34	3	1040	14	203	0.45	136	<10	26
92	M09MZ038R	Erdenei	Under	granodiorite	---	---	<0.005	5	0.2	<10	<0.2	7.85	620	1.5	<2	3.14	<0.5	16	18	50	4.44	2.2	1.20	785	<1	3.06	6	1060	8	356	0.52	113	<10	54
93	M09MZ040R	Erdenei	Under	quartz porphyry	oxidization	---	<0.005	2	<0.2	<10	<0.2	7.34	980	1.0	<2	0.11	<0.5	1	3	5	0.77	3.38	0.13	50	<1	3.67	<1	170	16	73	0.05	13	<10	10
97	M09MZ060R	Bulgan West	Undrakh	quartz veinlet	potassic alteration	malachite, chalcocite	<0.005	3	<0.2	<10	1.6	4.62	600	0.5	<2	0.97	<0.5	5	6	122	0.61	1.8	0.071	140	7	2.10	1	90	50	712	0.03	32	<10	10
157	M09RK054R	Bulgan West	Undrakh	quartz vein	limonite	malachite, chalcocopyrite, bornite	0.215	2500	1.8	30	33.8	2.82	180	1.0	---	0.16	<0.5	1	7	18300	1.73	0.24	0.01	30	208	1.81	1	---	14	117	0.08	11	50	16
158	M09RK055M	Bulgan West	Undrakh	granite	limonite	malachite along fracture	0.005	15	<0.2	40	1.4	5.21	570	1.5	2	0.26	<0.5	5	2	8860	0.37	2.08	0.09	25	14	2.34	1	90	2	144	0.01	5	<10	26
159	M09RK057M	Bulgan West	Undrakh	granite	limonite, potassic alteration, weak silicification, mica, quartz vein	malachite	<0.005	1	<0.2	<10	0.8	6.54	1160	1.5	<2	0.42	<0.5	1	3	465	0.27	4.11	0.05	55	<1	2.28	<1	40	12	208	0.05	5	<10	20
95	M09MZ052R	Bulgan West	Urmin tsgaan nuur	tuff breccia	---	---	<0.005	3	<0.2	<10	<0.2	9.10	1020	2.0	<2	1.94	<0.5	14	24	36	3.37	2.98	1.28	575	<1	3.73	15	1300	20	893	0.52	104	<10	72
96	M09MZ053R	Bulgan West	Urmin tsgaan nuur	syenite	---	---	<0.005	1	0.2	<10	<0.2	6.97	1760	1.5	<2	0.18	<0.5	1	6	9	0.99	4.94	0.21	180	<1	2.13	<1	100	14	165	0.10	10	<10	28
148	M09RK045R	Bulgan West	Urmin tsgaan nuur	lapilli tuff	---	---	<0.005	2	<0.2	<10	<0.2	7.81	1290	2.5	<2	1.39	<0.5	8	7	14	2.64	3.45	0.67	635	<1	3.47	3	1010	18	659	0.41	62	<10	80
149	M09RK046R	Bulgan West	Urmin tsgaan nuur	lapilli tuff	silicification	---	<0.005	<1	<0.2	<10	<0.2	8.29	960	3.0	<2	1.1	<0.5	7	6	19	1.99	3.64	0.53	460	<1	3.73	2	600	16	434	0.32	44	<10	52
150	M09RK047R	Bulgan West	Urmin tsgaan nuur	lapilli tuff	silicification, quartz vein in (W>2mm, coarse grain, white)	---	<0.005	<1	<0.2	<10	<0.2	6.90	280	3.0	<2	0.39	<0.5	1	7	15	0.86	4.09	0.13	290	<1	2.98	<1	130	28	114	0.20	10	<10	34



Table A-16 Geochemical analysis of rock samples

No.	Sample	Region	Name of occurrence	Rock Name	Alteration	Mineralization	Au (g/t)	As (ppm)	Sb (ppm)	Hg (ppb)	Ag (ppm)	Al (%)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sr (ppm)	Ti (%)	V (ppm)	W (ppm)	Zn (ppm)
20	M99NK020M	Khujirt	Yarigt	granite	oxide copper	malachite, azurite	<0.005	6	<0.2	10	6.2	6.14	860	2.0	<2	0.37	<0.5	5	3	4360	1.27	2.84	0.33	480	50	2.54	<1	390	14	199	0.13	22	<10	40
155	M99NK052M	Bulgan West	Zaitan	granite	limonite stain, potassic alteration	malachite	0.010	2	<0.2	10	<0.2	7.21	810	2.0	<2	0.76	<0.5	6	5	710	1.34	4.06	0.15	145	<1	2.60	4	320	10	358	0.19	35	<10	20
156	M99NK053M	Bulgan West	Zaitan	granite	strong limonite, silicification	malachite, azurite	0.535	6090	3.8	80	82.8	6.93	420	2.5	—	0.35	2	5	5	49100	3.03	0.6	0.04	75	341	4.65	3	—	36	286	0.19	13	140	24
62	M99MZ04R	Khujirt	Zostolgoi	silicified, breccia	silicification	limonite	<0.005	4	<0.2	<10	0.6	5.88	800	0.5	<2	0.01	<0.5	2	2	34	4.89	2.66	0.17	50	1	0.15	<1	260	2	12	0.08	13	<10	28
63	M99MZ05R	Khujirt	Zostolgoi	granite	—	—	<0.005	1	<0.2	<10	<0.2	6.38	290	0.5	<2	2.33	<0.5	1	4	<1	0.59	0.55	0.11	265	<1	3.80	<1	240	<2	246	0.18	12	<10	20
17	M99NK017R	Khujirt	Zostolgoi	granite	silicification	quartz, sericite, limonite	<0.005	3	<0.2	<10	1.6	6.34	900	1.5	<2	0.06	<0.5	1	3	4	1.19	2.69	0.35	40	1	0.52	<1	30	<2	15	0.08	7	<10	6
18	M99NK018R	Khujirt	Zostolgoi	andesite	argillization	—	<0.005	3	<0.2	<10	<0.2	6.90	40	<0.5	<2	6.07	<0.5	6	30	1	4.99	0.12	1.19	795	<1	1.59	10	780	<2	514	0.63	112	<10	24
19	M99NK019R	Khujirt	Zostolgoi	granite	silicification	—	<0.005	10	<0.2	<10	0.6	6.38	850	1.5	<2	0.13	<0.5	<1	2	3	1.78	2.13	0.28	55	1	2.00	<1	260	6	94	0.15	3	<10	2
114	M99NK02R	Khujirt	Zostolgoi	dacitic tuff breccia	reddish(white), moderate silicification	—	<0.005	8	<0.2	<10	<0.2	6.19	100	0.5	<2	0.28	<0.5	1	4	9	1.36	0.33	0.05	10	<1	4.66	<1	90	<2	77	0.04	2	<10	2
83	M99MZ02R	Erdenet	Zauchin gol	andesite	silicification	malachite	0.025	25	0.2	10	14.8	8.87	390	1.5	26	0.4	0.5	78	<1	8750	2.34	2.36	0.63	325	1	2.75	5	1310	260	156	0.16	49	<10	90
84	M99MZ02R	Erdenet	Zauchin gol	silicified rock	silicification	—	0.010	79	1.8	200	0.6	6.49	800	2.0	<2	0.03	<0.5	1	2	99	0.61	4.65	0.14	250	<1	0.21	<1	110	506	128	0.06	6	<10	40
137	M99RK02R	Erdenet	Zauchin gol	granite	—	—	<0.005	9	<0.2	<10	0.2	8.10	780	1.5	<2	2.43	<0.5	14	13	42	3.12	2.31	0.91	745	<1	3.74	10	1010	20	840	0.35	79	<10	120

Table A-17 Geochemical analysis of pan concentrated samples

No.	Sample	Survey Point No.	Area	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Pt (ppb)	Pd (ppb)	Au (ppb)	Sb (ppm)	As (ppm)	Ba (ppm)	Br (ppm)	Ce (ppm)	Cr (ppm)	Co (ppm)	La (ppm)	Mo (ppm)	Sc (ppm)	Ag (ppm)	Ta (ppm)	Th (ppm)	W (ppm)	U (ppm)
1	M99HH501P	25f	Southern Camp	39	8	59	10	<5	4	11	<1	3	620	<2	90	490	27	28	<5	24	<10	<2	6	<5	<2
2	M99HH502P	---	Southern Camp	39	5	53	4	<5	<2	<10	<1	5	650	<2	49	990	35	20	<5	22	<10	<2	4	<5	<2
3	M99MZ501P			3	6	36	2	<5	<2	<10	<1	2	720	<2	57	130	<20	24	<5	3	<10	<2	7	<5	<2
4	M99MZ502P	16	Altgana gol	9	5	29	<2	<5	<2	<10	<1	5	780	<2	53	630	<20	25	<5	6	<10	<2	5	<5	2
5	M99MZ503P	18	Altgana gol NW	18	8	41	<2	<5	4	<10	1	13	510	2	41	<100	21	18	<5	8	<10	<2	3	<5	<2
6	M99MZ504P	20	Khokhoo	3	3	13	<2	<5	<2	<10	<1	<2	1000	<2	73	120	<20	32	<5	6	<10	2	8	<5	<2
7	M99MZ505P	20a	Khokhoo	5	5	18	<2	<5	<2	<10	<1	<2	1500	<2	120	120	<20	41	<5	7	<10	<2	7	<5	<2
8	M99MZ506P	20c	Khokhoo	6	4	21	<2	<5	<2	<10	<1	<2	890	<2	70	160	<20	27	<5	12	<10	<2	5	<5	<2
9	M99MZ507P	38	Erdenet	23	17	57	<2	<5	<2	<10	<1	13	850	<2	58	<100	<20	22	<5	12	<10	<2	7	<5	<2
10	M99MZ508P	42	Erdenet	21	12	40	<2	<5	<2	<10	<1	8	620	<2	48	170	<20	23	<5	15	<10	<2	5	<5	<2
11	M99MZ509P	27	Bulgan West	20	18	60	<2	<5	<2	<10	<1	12	900	<2	50	<100	<20	22	<5	12	<10	<2	4	<5	<2
12	M99MZ510P	33	Bulgan	12	8	30	<2	<5	<2	<10	<1	4	910	<2	37	<100	<20	17	<5	7	<10	<2	3	<5	<2
13	M99MZ511P	SAR205	Bulgan	36	18	83	<2	<5	<2	<10	<1	8	880	<2	73	130	35	29	<5	16	<10	<2	4	<5	<2
14	M99RK500P	38-SAR	Erdenet	62	10	98	<2	<5	<2	<10	1	22	770	<2	110	<100	<20	35	<5	27	<10	<2	3	<5	<2
15	M99RK501P	36	Erdenet	28	25	84	<2	<5	<2	<10	<1	13	600	2	<20	<100	<20	16	<5	7	<10	<2	8	<5	2
16	M99RK502P	SAR136	Erdenet	18	10	35	<2	<5	<2	<10	<1	7	710	<2	87	170	22	32	<5	12	<10	<2	7	<5	2
17	M99RK503P	SAR200	Erdenet	18	6	35	<2	<5	<2	<10	<1	5	630	<2	47	<100	<20	17	<5	12	<10	<2	3	<5	<2
18	M99RK504P	SAR127	Erdenet	26	8	36	<2	<5	<2	<10	<1	7	510	<2	49	280	29	21	<5	32	<10	<2	4	<5	<2

Table A-18 Ore grade assay

Sample	Region	Name of Rock occurrence	Alteration	Mineralization	Au (g/t)	Ag (g/t)	Al (%)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)
M99H009R	Erdene	Northwest ore	---	pyrite, chalcopyrite, molybdenite	<0.03	5	8.90	1000	<10	<20	0.40	<10	10	<10	5670	1.25
M99RK020M	Erdene	Northwest silicified rock	strong silicification, quartz+sericite, quartz vein(B-type vein), hypogene zone	chalcopyrite vein and dissemination, covelin along fracture	<0.03	3	7.05	800	<10	<20	0.05	<10	<10	<10	5220	3.85
M99RK021M	Erdene	Northwest granite	silicification, limonite along crack, partly oxidized, potassic/biotite+K-feldspar	quartz+chalcopyrite and pyrite vein, dissemination, malachite along crack	<0.03	1	9.20	1200	<10	<20	0.35	<10	10	10	930	2.45
Sample	Region	Name of Rock occurrence	Alteration	Mineralization	K (%)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)	Ni (ppm)	Pb (%)	Sr (ppm)	Ti (%)	V (ppm)	Zn (ppm)	
M99H009R	Erdene	Northwest ore	---	pyrite, chalcopyrite, molybdenite	2.3	0.25	90.00	10	3.6	<10	0.01	500	0.05	0.05	30	20
M99RK020M	Erdene	Northwest silicified rock	strong silicification, quartz+sericite, quartz vein(B-type vein), hypogene zone	chalcopyrite vein and dissemination, covelin along fracture	3.1	0.25	30.00	110	0.4	<10	0.01	50	0.05	0.05	40	20
M99RK021M	Erdene	Northwest granite	silicification, limonite along crack, partly oxidized, potassic/biotite+K-feldspar	quartz+chalcopyrite and pyrite vein, dissemination, malachite along crack	2.7	0.65	830.00	<10	2.9	<10	0.02	390	0.15	0.15	40	600

Table A-19 Petrological chemical analysis of rock samples

No.	Sample	Region	Name of occurrence	Rock Name	Alteration	SiO2 (%)	TiO2 (%)	Al2O3 (%)	Fe2O3 (%)	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	P2O5 (%)	Cr2O3 (%)	LOI (%)	TOTAL (%)
16	M99MZ015R	Erdnet	Northwest	granitic rock	phyllite alteration	71.56	0.33	16.68	0.75	0.005	0.130	0.20	7.41	1.21	0.06	0.005	1.12	99.45
17	M99MZ017R	Erdnet	Northwest	granitic rock	potassic alteration	67.70	0.37	16.79	2.30	0.040	0.860	1.22	5.40	2.64	0.13	0.005	1.48	99.93
8	M99HH008R	Erdnet	Northwest	granite-granodiorite	--	66.29	0.57	15.79	3.43	0.050	1.030	2.47	4.21	4.14	0.13	0.005	1.33	99.44
9	M99HH010R	Erdnet	Northwest	andesite dyke	--	51.81	1.02	16.37	11.42	0.370	2.250	1.27	3.85	2.34	0.51	0.005	8.70	99.91
10	M99HH011R	Erdnet	Northwest	orc-granodiorite	(not identified)	68.26	0.38	16.85	2.11	0.030	0.750	1.09	5.57	2.52	0.15	0.005	1.66	99.37
11	M99HH012R	Erdnet	Northwest	andesite dyke	(not identified)	51.03	1.32	15.93	8.05	0.080	2.820	3.05	3.28	2.91	0.66	0.005	5.63	94.76
32	M99RK025R	Erdnet	SAR144	granite	potassic alteration? (biotite rich)	52.66	1.36	17.83	8.75	0.130	3.900	6.43	4.46	2.29	0.40	0.005	1.74	99.95
1	M99NK041R	Erdnet	Talbulag	andesite	---	57.87	0.93	15.9	6.24	0.080	0.840	6.73	3.65	2.29	0.33	0.005	4.61	99.47
2	M99NK051R	Erdnet	SAR139	granite	---	56.87	1.37	16.48	7.81	0.140	2.590	5.44	4.50	2.11	0.54	0.005	1.44	99.29
3	M99NK052R	Erdnet	SAR139	basalt	---	57.22	1.01	17.43	7.14	0.110	3.340	5.65	4.58	2.74	0.54	0.005	0.15	99.91
12	M99HH013R	Erdnet	SAR138	granite	---	60.29	0.68	17.47	5.10	0.140	2.080	3.44	5.23	3.85	0.27	0.005	1.09	99.64
13	M99HH014R	Erdnet	SAR139	basalt	silicified, quartz+epidote vein	59.72	0.69	17.82	5.94	0.080	1.620	5.04	4.76	2.06	0.45	0.005	1.65	99.83
14	M99HH015R	Erdnet	SAR139	granodiorite	---	62.85	0.66	16.85	4.37	0.080	1.690	3.77	4.52	2.88	0.31	0.005	1.88	99.86
15	M99HH017R	Erdnet	SAR139	granodiorite	epidote	62.46	0.70	16.44	4.57	0.090	2.090	3.99	4.64	3.12	0.27	0.005	1.31	99.68
33	M99RK030R	Erdnet	Central	granite	quartz vein in	67.17	0.44	16.49	2.81	0.040	1.020	2.43	5.01	2.45	0.16	0.005	1.19	99.21
34	M99RK032R	Erdnet	Central	diorite	epidote	57.37	0.64	18.26	6.20	0.100	2.520	3.20	5.55	2.62	0.33	0.005	2.12	98.91
4	M99NK059R	Erdnet	Tourmarine	granite	---	67.99	0.52	15.25	2.77	0.030	0.570	1.32	4.06	4.94	0.12	0.005	1.20	98.77
5	M99NK061R	Erdnet	Tourmarine	granite	---	68.52	0.52	15.21	3.04	0.040	0.640	1.55	4.21	5.00	0.11	0.005	0.84	99.68
35	M99RK038R	Erdnet	SAR238	granite	quartz vein in	69.18	0.46	14.86	2.84	0.060	0.810	1.83	4.29	3.89	0.11	0.005	1.11	99.44
20	M99MZ042R	Erdnet	Ouyt	granodiorite porphyry	sericitic	68.93	0.29	16.26	1.72	0.050	0.690	1.14	4.22	3.75	0.12	0.005	1.77	98.94
21	M99MZ043R	Erdnet	Ouyt	granodiorite porphyry	---	69.36	0.29	16.73	1.64	0.020	0.520	1.56	5.85	2.21	0.08	0.005	1.22	99.48
22	M99MZ044R	Erdnet	Ouyt	granodiorite	---	69.58	0.28	17.18	1.05	0.030	0.570	1.34	6.30	1.75	0.04	0.005	1.23	99.35
18	M99MZ038R	Erdnet	Under	granodiorite	k-feldspar, epidote	61.32	0.91	15.38	7.05	0.160	2.180	4.54	3.89	2.45	0.27	0.005	1.47	99.62
19	M99MZ039R	Erdnet	Under	quartz porphyry	---	72.73	0.29	13.86	0.74	0.010	0.005	0.15	4.00	5.88	0.04	0.005	0.96	98.66
23	M99MZ045R	Erdnet	SAR233	volcanic rock	silicification	71.00	0.31	15.39	1.08	0.140	0.005	0.10	5.75	4.81	0.07	0.005	0.93	99.58
24	M99MZ046R	Erdnet	SAR233	hydrothermal breccia	---	65.41	0.90	15.47	4.96	0.090	1.210	1.32	5.73	2.40	0.44	0.005	1.72	99.65
25	M99MZ047R	Erdnet	SAR235	aplitic rock	silicification	76.84	0.12	12.37	0.71	0.030	0.100	0.55	3.04	5.30	0.03	0.005	0.54	99.63
26	M99MZ048R	Erdnet	SAR235	granitic rock	silicification, sericitic	50.79	0.87	19.06	8.69	0.140	2.840	11.28	2.59	0.13	0.23	0.005	2.83	99.45
6	M99NK067R	Erdnet	Zhalu	basaltic andesite	---	55.26	1.18	16.9	7.45	0.090	3.920	4.43	4.19	2.95	0.57	0.005	2.50	99.44
36	M99RK044R	Erdnet	SAR127	granodiorite	---	52.84	1.11	17.42	8.30	0.130	5.110	7.50	4.11	1.29	0.29	0.005	1.55	99.65
27	M99MZ054R	Bulgan West	Burged khyr	granitic rock	---	72.45	0.30	14.21	1.84	0.030	0.005	0.25	3.93	5.43	0.03	0.005	0.91	99.38
28	M99MZ055R	Bulgan West	Burged khyr	silicified rock	hypogene alunitic	74.77	0.31	14.01	0.39	0.005	0.050	0.15	3.43	5.45	0.03	0.005	0.98	99.57
29	M99MZ056R	Bulgan West	Burged khyr	silicified rock	hypogene alunitic	72.35	0.38	14.58	1.46	0.030	0.070	0.27	3.98	4.95	0.01	0.005	1.08	99.16
30	M99MZ057R	Bulgan West	Nomgon	magnetic rock	hypogene alunitic	57.40	1.95	15.38	9.18	0.190	2.070	4.28	5.74	2.12	0.73	0.005	0.58	99.62
31	M99MZ058R	Bulgan West	Nomgon	granite	k-feldspar replacement	62.69	0.92	17.25	4.64	0.070	1.250	2.51	5.73	3.80	0.22	0.005	0.73	99.81
7	M99NK083R	Bulgan	Khar uul	andesite	---	53.62	1.09	17.25	7.37	0.110	3.150	6.40	4.62	2.83	0.57	0.005	2.92	99.93

Table A-19 Petrological chemical analysis of rock samples

No.	Sample	Region	Name of occurrence	Rock Name	Alteration	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Sr (ppm)	W (ppm)	U (ppm)	Th (ppm)	Sr (ppm)	Rb (ppm)	Ba (ppm)	V (ppm)	Co (ppm)	Cs (ppm)	Ga (ppm)	Hf (ppm)	Ni (ppm)	Nb (ppm)	Ta (ppm)	Ti (ppm)	Zr (ppm)
16	M99MZ015R	Erdeneet	Northwest	granitic rock	phyllite alteration	850.0	5	5	0.5	0.5	28	0.50	0.5	293.0	21.6	187	15.0	0.3	0.5	19	5	2.5	1.0	0.25	0.25	205
17	M99MZ017R	Erdeneet	Northwest	granitic rock	potassic alteration	455.0	10	55	0.5	0.5	8	1.50	3.0	885.0	42.4	910	35.0	3.0	1.3	19	4	2.5	2.0	0.25	0.25	213
8	M99HH008R	Erdeneet	Northwest	granite - granodiorite	---	30.0	10	30	0.5	0.5	5	1.50	5.0	583.0	57.0	967	55.0	6.0	1.1	17	9	2.5	4.0	0.25	0.25	353
9	M99HH010R	Erdeneet	Northwest	andesite dyke	---	40.0	5	155	0.5	0.5	5	1.00	3.0	147.5	34.6	770	120.0	47.0	3.2	18	4	15.0	6.0	0.25	0.25	165
10	M99HH011R	Erdeneet	Northwest	ore-granodiorite	(not identified)	1010.0	10	70	0.5	0.5	8	1.50	3.0	902.0	38.0	983	35.0	2.5	1.2	18	5	2.5	1.0	0.25	0.25	223
11	M99HH012R	Erdeneet	Northwest	andesite dyke	(not identified)	31600.0	10	245	0.5	0.5	8	0.50	3.0	1395.0	42.2	1200	155.0	19.0	1.1	19	4	35.0	8.0	0.25	0.25	179
32	M99RK025R	Erdeneet	SAR144	granite	potassic alteration? (barite rich)	130.0	5	70	0.5	0.5	6	0.50	1.0	1070.0	41.2	1325	185.0	20.5	1.4	21	10	15.0	5.0	0.25	0.25	328
1	M99NK041R	Erdeneet	Talbulag	andesite	---	30.0	15	65	0.5	0.5	5	2.50	9.0	1300.0	45.8	989	170.0	15.0	1.1	17	4	25.0	4.0	0.25	0.25	185
2	M99NK051R	Erdeneet	SAR139	granite	---	35.0	15	65	0.5	0.5	6	1.50	5.0	821.0	41.0	508	140.0	12.5	0.7	18	5	2.5	4.0	0.25	0.25	190
3	M99NK052R	Erdeneet	SAR139	basalt	---	30.0	10	85	0.5	0.5	4	1.00	4.0	1035.0	49.4	978	120.0	18.0	0.8	19	6	20.0	7.0	0.25	0.25	244
12	M99HH013R	Erdeneet	SAR138	granite	---	70.0	15	60	0.5	0.5	6	4.50	7.0	636.0	87.4	576	70.0	10.5	5.8	21	4	2.5	3.0	0.25	0.25	153
13	M99HH014R	Erdeneet	SAR139	basalt	silicified, quartz+epidote vein	495.0	5	30	0.5	0.5	5	1.00	3.0	1545.0	16.0	1225	75.0	8.5	0.6	19	4	2.5	3.0	0.25	0.25	155
14	M99HH015R	Erdeneet	SAR139	granodiorite	---	30.0	15	65	0.5	0.5	5	1.50	5.0	1215.0	29.6	869	80.0	10.0	0.3	19	4	5.0	2.0	0.25	0.25	155
15	M99HH017R	Erdeneet	SAR139	granodiorite	epidote	2.5	10	60	0.5	0.5	5	1.50	4.0	1365.0	31.0	1125	80.0	9.5	0.8	18	4	15.0	1.0	0.25	0.25	154
33	M99RK030R	Erdeneet	Central	granite	quartz vein in	660.0	5	40	0.5	0.5	6	1.00	3.0	937.0	40.4	948	45.0	5.0	1.0	19	6	2.5	2.0	0.25	0.25	222
34	M99RK032R	Erdeneet	Central	diorite	epidote	2190.0	5	90	0.5	0.5	6	1.50	3.0	1175.0	54.4	855	90.0	19.5	0.9	21	3	2.5	1.0	0.25	0.25	126
4	M99NK059R	Erdeneet	Tournaime	granite	---	15.0	15	50	0.5	0.5	6	4.50	23.0	209.0	162.0	610	40.0	2.5	6.0	16	13	2.5	5.0	0.25	0.25	375
5	M99NK061R	Erdeneet	Tournaime	granite	---	30.0	15	60	0.5	0.5	6	5.00	23.0	217.0	166.0	615	40.0	5.0	4.1	16	12	2.5	5.0	0.25	0.25	396
35	M99RK038R	Erdeneet	SAR238	granite	quartz vein in	25.0	15	40	0.5	0.5	5	1.50	11.0	280.0	114.0	633	45.0	4.5	2.6	16	11	2.5	6.0	0.25	0.25	349
20	M99MZ042R	Erdeneet	Ouyt	granodiorite porphyry	sericitic	2.5	5	10	0.5	0.5	7	0.50	3.0	942.0	72.0	1020	10.0	2.0	2.0	18	4	2.5	1.0	0.25	0.25	161
21	M99MZ043R	Erdeneet	Ouyt	granodiorite porphyry	---	500.0	10	35	0.5	0.5	5	0.50	1.0	950.0	21.2	1055	20.0	1.5	0.4	17	4	2.5	1.0	0.25	0.25	164
22	M99MZ044R	Erdeneet	Ouyt	granodiorite	---	385.0	10	115	0.5	0.5	5	0.25	0.5	930.0	17.2	921	15.0	0.5	1.1	15	4	2.5	0.5	0.25	0.25	192
18	M99MZ036R	Erdeneet	Under	granodiorite	k-feldspar, epidote	30.0	5	75	0.5	0.5	5	3.00	16.0	400.0	45.8	628	110.0	14.5	1.2	17	8	2.5	6.0	0.25	0.25	320
19	M99MZ039R	Erdeneet	Under	quartz porphyry	---	590.0	15	55	0.5	0.5	5	1.50	6.0	107.0	76.0	1355	25.0	0.3	0.5	14	8	2.5	6.0	0.25	0.25	271
23	M99MZ045R	Erdeneet	SAR233	volcanic rock	silicification	2.5	10	50	0.5	0.5	4	3.00	13.0	58.0	64.2	380	5.0	0.3	0.5	19	12	2.5	21.0	1.50	0.25	397
24	M99MZ046R	Erdeneet	SAR233	hydrothermal breccia	---	5.0	5	45	0.5	0.5	5	1.50	7.0	444.0	19.0	887	50.0	5.5	0.9	18	10	2.5	18.0	1.50	0.25	377
25	M99MZ047R	Erdeneet	SAR235	aplitic rock	silicification	2.5	15	10	0.5	0.5	5	0.50	17.0	84.7	61.8	300	2.5	0.3	0.3	12	9	2.5	2.0	0.25	0.25	284
26	M99MZ048R	Erdeneet	SAR235	granitic rock	silicification, sericitic	10.0	2.5	90	0.5	0.5	5	0.25	1.0	1695.0	1.8	50.5	225.0	13.5	<0.1	23	2	2.5	2.0	0.25	0.25	95
6	M99NK067R	Erdeneet	Zahu	basaltic andesite	---	55.0	25	125	0.5	0.5	5	0.50	4.0	1355.0	50.6	1120	135.0	21.0	0.5	18	5	40.0	6.0	0.25	0.25	182
36	M99RK044R	Erdeneet	SAR127	granodiorite	---	60.0	5	70	0.5	0.5	6	0.50	3.0	1195.0	20.2	515	190.0	25.5	0.7	19	2	30.0	1.0	0.25	0.25	93
27	M99MZ054R	Bulgan West	Burged khyr	granitic rock	---	5.0	25	120	0.5	0.5	6	1.50	14.0	149.5	132.5	619	15.0	1.0	1.9	16	12	2.5	8.0	0.50	0.50	358
28	M99MZ055R	Bulgan West	Burged khyr	silicified rock	hypogene alunite	15.0	50	20	0.5	1.0	6	1.50	10.0	166.5	132.0	608	10.0	0.3	1.2	16	10	2.5	9.0	0.50	0.50	310
29	M99MZ056R	Bulgan West	Burged khyr	silicified rock	hypogene alunite	40.0	50	90	0.5	0.5	6	2.50	12.0	221.0	99.0	817	20.0	1.5	1.3	16	10	2.5	8.0	0.50	0.50	334
30	M99MZ057R	Bulgan West	Nomgon	magnetic rock	k-feldspar	120.0	10	120	0.5	0.5	5	0.25	1.0	695.0	19.0	954	110.0	10.0	0.4	22	6	2.5	8.0	0.25	0.25	201
31	M99MZ059R	Bulgan West	Nomgon	granite	replacement	10.0	5	40	0.5	0.5	5	1.50	6.0	443.0	55.8	940	65.0	7.5	1.0	21	19	2.5	9.0	0.25	0.25	677
7	M99NK063R	Bulgan	Khar uul	andesite	---	2.5	5	85	0.5	0.5	4	0.50	2.0	1720.0	42.2	855	145.0	19.0	0.1	19	4	30.0	7.0	0.25	0.25	171

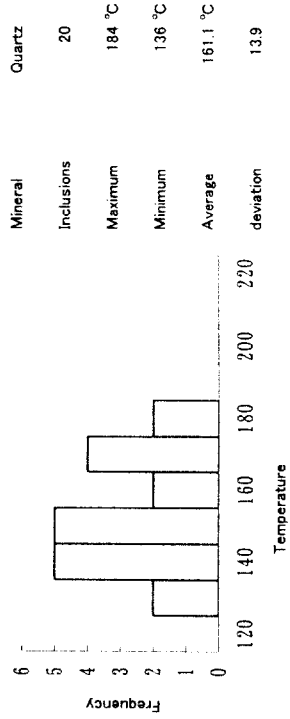
Table A-19 Petrological chemical analysis of rock samples

No	Sample	Region	Name of occurrence	Rock Name	Alteration	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Y (ppm)	
16	M99MZ015R	Erdene	Northwest	granitic rock	phylic alteration	4.5	10.00	0.80	3.00	0.40	0.05	0.10	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	1.0
17	M99MZ017R	Erdene	Northwest	granitic rock	potassic alteration	21.5	44.50	4.80	17.00	2.40	0.70	2.30	0.05	0.9	0.05	0.30	0.05	0.05	0.40	0.05	6.0
8	M99HH008R	Erdene	Northwest	granite - granodiorite	--	15.0	36.50	4.30	19.00	3.80	0.80	3.10	0.10	2.5	0.30	1.10	0.05	1.20	0.05	12.5	
9	M99HH010R	Erdene	Northwest	andesite dyke	--	25.0	56.50	6.80	25.50	5.70	1.60	4.70	0.30	2.7	0.40	1.00	0.05	1.00	0.05	13.5	
10	M99HH011R	Erdene	Northwest	ore-granodiorite	(not identified)	11.0	24.00	2.60	11.00	2.40	0.80	1.70	0.05	0.8	0.05	0.10	0.05	0.10	0.05	5.5	
11	M99HH012R	Erdene	Northwest	andesite dyke	(not identified)	31.5	74.50	9.50	42.50	9.00	2.70	10.70	1.30	8.1	1.70	4.80	0.40	4.50	0.40	56.0	
32	M99RK025R	Erdene	SAR144	granite	potassic alteration? (botite rich)	18.5	43.00	5.40	22.50	5.80	1.40	5.40	0.40	3.1	0.40	1.50	0.05	1.20	0.05	15.0	
1	M99NK041R	Erdene	Talbulag	andesite	---	21.0	47.00	5.60	21.50	4.10	1.20	3.70	0.20	2.0	0.30	0.80	0.05	1.00	0.05	11.0	
2	M99NK051R	Erdene	SAR139	granite	---	18.5	46.50	6.00	26.00	5.40	1.50	5.70	0.60	3.9	0.70	1.90	0.05	1.90	0.05	22.5	
3	M99NK052R	Erdene	SAR139	basalt	---	33.5	72.00	8.30	33.00	5.90	1.60	5.00	0.50	3.5	0.50	1.50	0.05	1.60	0.05	16.5	
12	M99HH013R	Erdene	SAR 138	granite	--	29.5	49.50	5.80	24.50	4.60	0.80	4.20	0.30	2.0	0.10	0.90	0.05	0.70	0.05	10.5	
13	M99HH014R	Erdene	SAR 139	basalt	silicified, quartz-epidote vein	22.5	50.50	6.30	25.00	4.40	1.30	3.70	0.10	2.5	0.20	1.00	0.05	0.90	0.05	12.0	
14	M99HH015R	Erdene	SAR 139	granodiorite	--	18.5	42.00	5.30	19.50	3.80	1.10	3.20	0.10	1.8	0.10	0.70	0.05	0.60	0.05	9.0	
15	M99HH017R	Erdene	SAR 139	granodiorite	epidote	18.0	40.50	5.20	21.00	4.20	1.10	3.50	0.10	1.6	0.10	0.50	0.05	0.70	0.05	8.0	
33	M99RK030R	Erdene	Central	granite	quartz vein in	17.0	36.50	3.90	15.50	2.60	0.80	2.30	0.05	1.0	0.05	0.30	0.05	0.10	0.05	6.0	
34	M99RK032R	Erdene	Central	diorite	epidote	17.0	38.50	4.80	21.00	3.70	1.10	3.30	0.10	2.2	0.20	0.80	0.05	1.10	0.05	12.5	
4	M99NK059R	Erdene	Tourmaizne	granite	---	25.5	61.50	7.30	28.50	5.80	0.90	7.00	0.70	5.4	1.00	3.30	0.20	3.30	0.30	32.0	
5	M99NK061R	Erdene	Tourmaizne	granite	---	22.0	48.50	5.80	23.00	4.70	0.60	4.90	0.40	3.7	0.80	2.70	0.05	2.70	0.05	25.5	
35	M99RK038R	Erdene	SAR238	granite	quartz vein in	23.0	52.50	6.10	23.00	3.90	0.70	3.90	0.30	2.8	0.40	1.60	0.05	2.10	0.05	17.0	
20	M99MZ042R	Erdene	Oyut	granodiorite porphyry	sericitic	16.0	32.50	3.80	13.00	2.10	0.60	2.00	0.05	0.7	0.05	0.20	0.05	0.20	0.05	5.0	
21	M99MZ043R	Erdene	Oyut	granodiorite porphyry	---	17.0	35.00	4.20	17.00	3.30	0.90	3.10	0.30	1.9	0.40	1.10	0.05	0.80	0.05	13.5	
22	M99MZ044R	Erdene	Oyut	granodiorite	---	10.0	19.50	2.10	8.00	1.30	0.50	0.60	0.05	0.2	0.05	0.05	0.05	0.05	0.05	2.0	
18	M99MZ036R	Erdene	Under	granodiorite	k-feldspar, epidote	26.0	57.00	8.40	30.00	7.70	2.60	7.40	1.90	6.7	1.90	3.90	1.10	4.40	1.20	31.5	
19	M99MZ039R	Erdene	Under	quartz porphyry	---	22.0	47.00	5.60	21.50	4.20	1.00	4.60	0.40	4.1	0.80	2.00	0.10	2.80	0.20	21.5	
23	M99MZ045R	Erdene	SAR233	volcanic rock	silicification	57.0	118.50	13.00	43.50	6.70	0.90	6.00	0.60	3.9	0.60	2.00	0.05	2.20	0.10	21.5	
24	M99MZ046R	Erdene	SAR233	hydrothermal breccia	---	38.0	85.00	10.00	38.50	6.70	1.50	6.20	0.70	4.2	0.70	2.20	0.05	2.10	0.05	20.5	
25	M99MZ047R	Erdene	SAR235	aplitic rock	silicification	29.0	57.50	5.80	19.50	2.60	0.05	1.40	0.05	0.4	0.05	0.05	0.05	0.05	0.05	3.0	
26	M99MZ048R	Erdene	SAR235	granitic rock	silicification, sericite	14.5	32.00	4.00	16.00	3.00	1.30	3.10	0.10	2.4	0.30	0.90	0.05	1.10	0.05	11.0	
6	M99NK067R	Erdene	Zалу	basaltic andesite	---	31.0	70.00	7.80	30.50	5.50	1.70	4.50	0.40	2.5	0.30	0.90	0.05	0.80	0.05	11.0	
36	M99RK044R	Erdene	SAR127	granodiorite	---	13.5	31.50	4.10	18.50	4.10	1.20	3.90	0.30	2.2	0.40	1.10	0.05	0.70	0.05	12.0	
27	M99MZ054R	Bulgan West	Burged khyr	granitic rock	---	7.5	37.00	1.90	7.50	1.40	0.10	1.30	0.05	1.6	0.10	0.60	0.05	0.90	0.05	8.0	
28	M99MZ055R	Bulgan West	Burged khyr	silicified rock	hypogene alunitic	19.5	48.00	5.30	17.00	2.50	0.30	1.70	0.05	1.7	0.30	1.10	0.05	1.50	0.05	11.0	
29	M99MZ056R	Bulgan West	Burged khyr	silicified rock	hypogene alunitic	22.0	50.50	5.10	19.00	3.60	0.60	2.60	0.10	1.9	0.20	0.90	0.05	1.10	0.05	11.5	
30	M99MZ057R	Bulgan West	Nomgon	magnetite rock	k-feldspar	31.0	76.50	10.80	50.00	10.40	2.50	9.20	1.10	6.5	1.10	3.40	0.10	3.20	0.10	32.0	
31	M99MZ059R	Bulgan West	Nomgon	granite	replacement	24.5	58.00	7.20	29.50	5.80	1.10	5.10	0.50	3.4	0.60	2.00	0.05	1.90	0.10	19.5	
7	M99NK083R	Bulgan	Khar ul	andesite	--	33.5	70.50	8.50	32.50	5.30	1.60	4.70	0.30	2.3	0.30	1.00	0.05	0.70	0.05	12.0	

Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (1/7)

Sample: M99NK003M Fluid inclusion: Many other secondary inclusions are observed.

No.	Mineral	Size (m μ)	Volume ratio (%)	Form	Temperature (°C)	Melting Temp (°C)	NaCl Wt (%)
1	Quartz	5.0	10	po	148	-2.2	3.71
2	Quartz	5.0	10	po	157	-2.5	4.18
3	Quartz	5.0	7	po	139	-2.7	4.49
4	Quartz	5.0	10	irr	142	-1.0	1.74
5	Quartz	7.5	10	po	146	-2.8	4.65
6	Quartz	5.0	7	po	136	-1.5	2.57
7	Quartz	2.5	7	po	144	-	-
8	Quartz	< 2.5	7	po	156	-	-
9	Quartz	10.0	12	po	164	-3.0	4.96
10	Quartz	7.5	10	irr	173	-1.8	3.06
11	Quartz	7.5	12	po	182	-2.2	3.71
12	Quartz	5.0	10	po	166	-1.6	2.74
13	Quartz	5.0	7	eg	148	-	-
14	Quartz	2.5	5	po	171	-	-
15	Quartz	< 2.5	5	eg	155	-	-
16	Quartz	< 2.5	3	eg	150	-	-
17	Quartz	7.5	13	po	184	-1.7	2.90
18	Quartz	5.0	10	po	172	-2.8	4.65
19	Quartz	5.0	7	po	175	-2.0	3.39
20	Quartz	2.5	5	eg	156	-	-

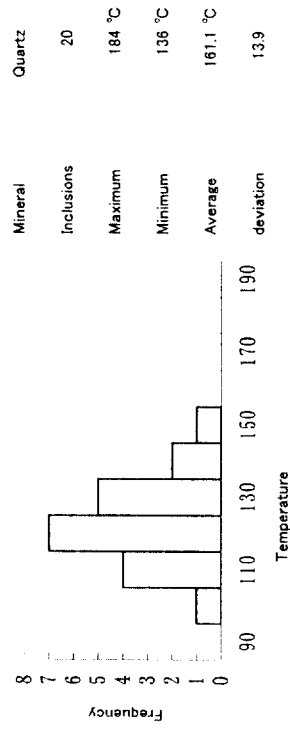


Mineral	Quartz
Inclusions	20
Maximum	184 °C
Minimum	136 °C
Average	161.1 °C
deviation	13.9

Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (2/7)

Sample: M99NK005M Fluid inclusion: Many other secondary inclusions are observed.

No.	Mineral	Size (m μ)	Volume ratio (%)	Form	Temperature (°C)	Melting Temp (°C)	NaCl Wt (%)
1	Quartz	5.0	10	po	112	-1.3	2.24
2	Quartz	5.0	7	po	109	-1.0	1.74
3	Quartz	12.5	13	irr	143	-2.8	4.65
4	Quartz	7.5	12	po	128	-2.4	4.03
5	Quartz	5.0	10	po	121	-1.4	2.41
6	Quartz	5.0	7	po	131	-1.1	1.91
7	Quartz	5.0	5	eg	110	-1.0	1.74
8	Quartz	2.5	7	eg	125	-	-
9	Quartz	5.0	10	po	137	-1.4	2.41
10	Quartz	5.0	10	po	134	-	-
11	Quartz	5.0	10	po	128	-1.3	2.24
12	Quartz	7.5	12	sq	151	-2.2	3.71
13	Quartz	5.0	12	po	137	-1.4	2.41
14	Quartz	5.0	10	po	122	-1.3	2.24
15	Quartz	2.5	7	eg	137	-	-
16	Quartz	< 2.5	5	eg	111	-	-
17	Quartz	7.5	10	po	124	-1.3	2.24
18	Quartz	7.5	10	po	145	-1.3	2.24
19	Quartz	2.5	5	eg	117	-	-
20	Quartz	5.0	7	po	121	-0.8	1.40



Mineral	Quartz
Inclusions	20
Maximum	184 °C
Minimum	136 °C
Average	161.1 °C
deviation	13.9

Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (3/7)

Sample: M99NK037R

Fluid inclusion: Many other legiod single phase inclusions are observed.

No.	Mineral	Size (mμ)	Volume ratio (%)	Form	Temperature (°C)	Meiting Temp (°C)	NaCl Wt (%)
1	Quartz	12.5	10	irr	175	-0.9	1.57
2	Quartz	5.0	7	po	181	-0.5	0.88
3	Quartz	2.5	3	eg	179	-	-
4	Quartz	2.5	3	eg	167	-	-
5	Quartz	7.5	10	po	193	-0.8	1.40
6	Quartz	5.0	10	po	188	-0.3	0.53
7	Quartz	5.0	7	po	167	-0.4	0.71
8	Quartz	5.0	10	sq	188	-	-
9	Quartz	5.0	10	po	191	-0.3	0.53
10	Quartz	5.0	7	po	164	-0.5	0.88
11	Quartz	10.0	7	po	193	-0.8	1.40
12	Quartz	5.0	12	po	204	-0.6	1.05
13	Quartz	2.5	10	po	202	-	-
14	Quartz	< 2.5	7	eg	177	-	-
15	Quartz	< 2.5	5	eg	151	-	-
16	Quartz	5.0	10	po	182	-0.7	1.23
17	Quartz	5.0	7	po	178	-0.8	1.40
18	Quartz	2.5	5	eg	161	-	-
19	Quartz	5.0	10	po	177	-	-
20	Quartz	5.0	7	po	171	-0.5	0.88

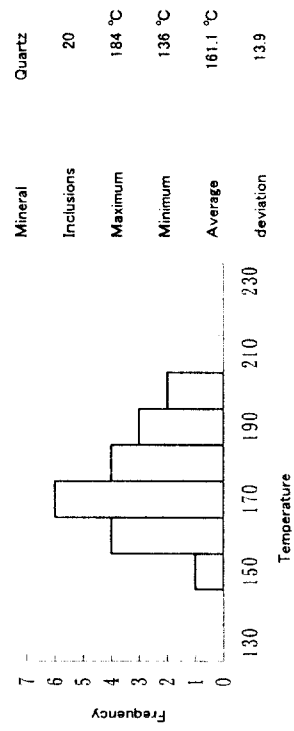


Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (4/7)

Sample: M99MZ008M

Fluid inclusion: Many other secondary inclusions are observed.  
Necking down is also observed.

No.	Mineral	Size (mμ)	Volume ratio (%)	Form	Temperature (°C)	Meiting Temp (°C)	NaCl Wt (%)
1	Quartz	10.0	7	po	181	-7.5	11.10
2	Quartz	22.5	10	irr	155	-7.8	11.46
3	Quartz	10.0	7	po	142	-7.3	10.86
4	Quartz	5.0	10	po	175	-	-
5	Quartz	5.0	10	po	186	-	-
6	Quartz	15.0	7	tu	193	-4.1	6.59
7	Quartz	10.0	7	tr	173	-5.2	8.14
8	Quartz	7.5	10	po	189	-3.5	5.71
9	Quartz	12.5	12	irr	204	-8.0	11.70
10	Quartz	10.0	10	po	194	-6.7	10.11
11	Quartz	12.5	10	irr	206	-8.2	11.93
12	Quartz	7.5	10	eg	196	-3.8	6.16
13	Quartz	7.5	7	po	192	-5.1	8.00
14	Quartz	5.0	7	po	188	-	-
15	Quartz	12.5	12	irr	206	-4.3	6.88
16	Quartz	7.5	10	po	182	-5.8	8.95
17	Quartz	5.0	7	po	164	-	-
18	Quartz	10.0	12	irr	201	-7.7	11.34
19	Quartz	5.0	10	po	177	-7.6	11.22
20	Quartz	5.0	7	po	156	-	-

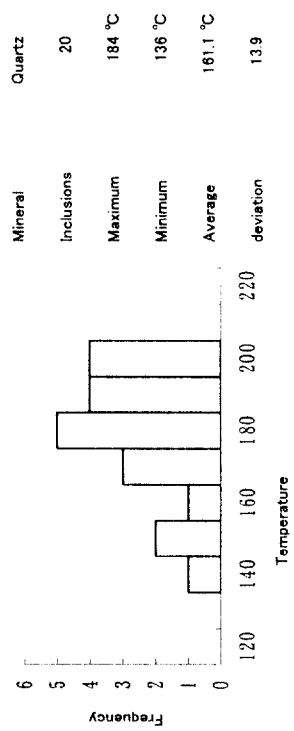




Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (5/7)

Sample: M99MZ015M

Fluid inclusion: Many other secondary inclusions are observed.

No.	Mineral	Size (m $\mu$ )	Volume ratio (%)	Form	Temperature (°C)	Melting Temp (°C)	NaCl Wt (%)
1	Quartz	10.0	10	irr	161	-0.8	1.40
2	Quartz	5.0	10	po	169	-1.2	2.07
3	Quartz	5.0	10	po	162		
4	Quartz	20.0	10	po	144	-1.8	3.06
5	Quartz	5.0	7	po	132	-1.0	1.74
6	Quartz	10.0	10	po	143	-1.4	2.41
7	Quartz	5.0	10	sq	159	-1.0	1.74
8	Quartz	5.0	7	po	140	-1.2	2.07
9	Quartz	5.0	5	po	144		
10	Quartz	2.5	3	po	142		
11	Quartz	7.5	10	sq	160	-1.1	1.91
12	Quartz	5.0	10	po	155	-0.7	1.23
13	Quartz	5.0	7	po	151	-0.8	1.40
14	Quartz	5.0	3	po	142	-0.7	1.23
15	Quartz	12.5	12	irr	138	-0.8	1.40
16	Quartz	10.0	10	irr	142	-1.6	2.74
17	Quartz	10.0	12	po	172	-1.8	3.06
18	Quartz	7.5	10	po	155	-1.2	2.07
19	Quartz	2.5	7	eg	154		
20	Quartz	< 2.5	5	eg	158		

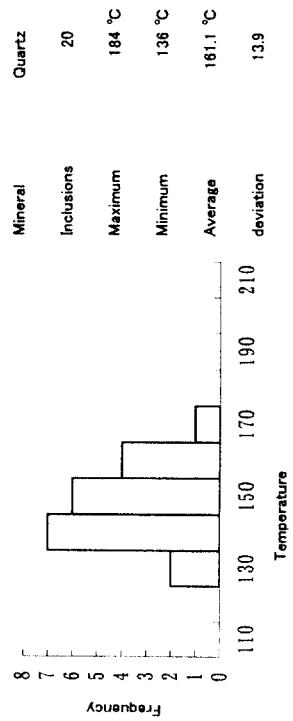


Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (6/7)

Sample: M99MZ065M

Fluid inclusion: Many other liquid single phase inclusions are observed.

No.	Mineral	Size (m $\mu$ )	Volume ratio (%)	Form	Temperature (°C)	Melting Temp (°C)	NaCl Wt (%)
1	Quartz	5.0	7	po	176	-0.1	0.18
2	Quartz	5.0	7	po	167	-0.2	0.35
3	Quartz	7.5	7	po	156	0.0	0.00
4	Quartz	7.5	7	po	159	-0.2	0.35
5	Quartz	5.0	10	po	195	0.0	0.00
6	Quartz	2.5	7	eg	187		
7	Quartz	2.5	5	eg	152		
8	Quartz	5.0	10	po	188	-0.2	0.35
9	Quartz	5.0	7	po	194	0.0	0.00
10	Quartz	2.5	5	eg	175		
11	Quartz	< 2.5	5	eg	145		
12	Quartz	< 2.5	3	eg	147		
13	Quartz	7.5	10	sq	186	0.0	0.00
14	Quartz	5.0	5	po	176	-0.1	0.18
15	Quartz	5.0	5	po	171	-0.1	0.18
16	Quartz	2.5	5	eg	160		
17	Quartz	2.5	3	eg	145		
18	Quartz	5.0	7	po	174	-0.2	0.35
19	Quartz	5.0	7	po	182	0.0	0.00
20	Quartz	< 2.5	5	eg	151		

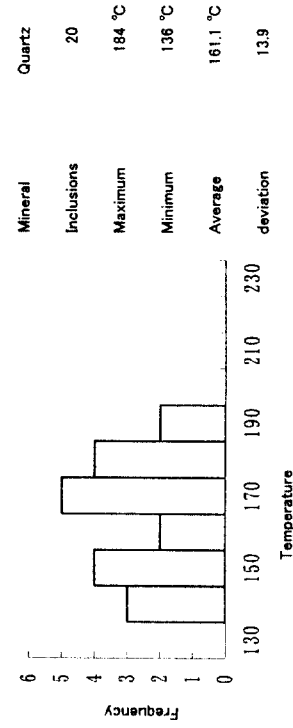
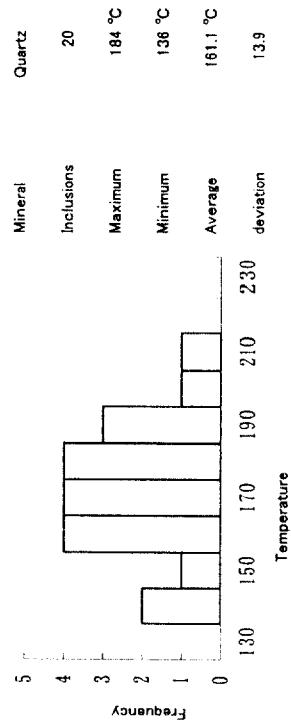


Table A-20 Homogenization temperature and salinity of fluid inclusions of quartz samples (7/7)

Sample: M99RK013R Fluid inclusion: Many other secondary inclusions are observed.

No.	Mineral	Size (m $\mu$ )	Volume ratio (%)	Form	Temperature (°C)	Melting Temp (°C)	NaCl Wt (%)
1	Quartz	7.5	10	irr	186	-0.5	0.88
2	Quartz	2.5	7	po	194	-	-
3	Quartz	2.5	5	po	202	-	-
4	Quartz	< 2.5	5	po	147	-	-
5	Quartz	< 2.5	5	eg	162	-	-
6	Quartz	5.0	10	po	159	-0.4	0.71
7	Quartz	5.0	7	po	184	-0.4	0.71
8	Quartz	< 2.5	5	eg	163	-	-
9	Quartz	< 2.5	3	eg	173	-	-
10	Quartz	< 2.5	5	eg	176	-	-
11	Quartz	5.0	12	po	217	-0.4	0.71
12	Quartz	5.0	10	po	190	-0.5	0.88
13	Quartz	5.0	7	sq	177	-0.2	0.35
14	Quartz	< 2.5	10	po	182	-	-
15	Quartz	2.5	5	po	193	-	-
16	Quartz	< 2.5	5	eg	167	-	-
17	Quartz	< 2.5	3	eg	181	-	-
18	Quartz	5.0	7	po	188	-0.4	0.71
19	Quartz	< 2.5	5	eg	172	-	-
20	Quartz	< 2.5	3	eg	148	-	-



Legend:  
 Form  
 eg: egg-shape; irr: irregular; po: polygon; sq: square; tr: triangle; tu: tube; wg: wedge-shape  
 Mineral: Quartz  
 Inclusions: 20  
 Maximum: 184 °C  
 Minimum: 138 °C  
 Average: 161.1 °C  
 deviation: 13.9

# Chromian spinel

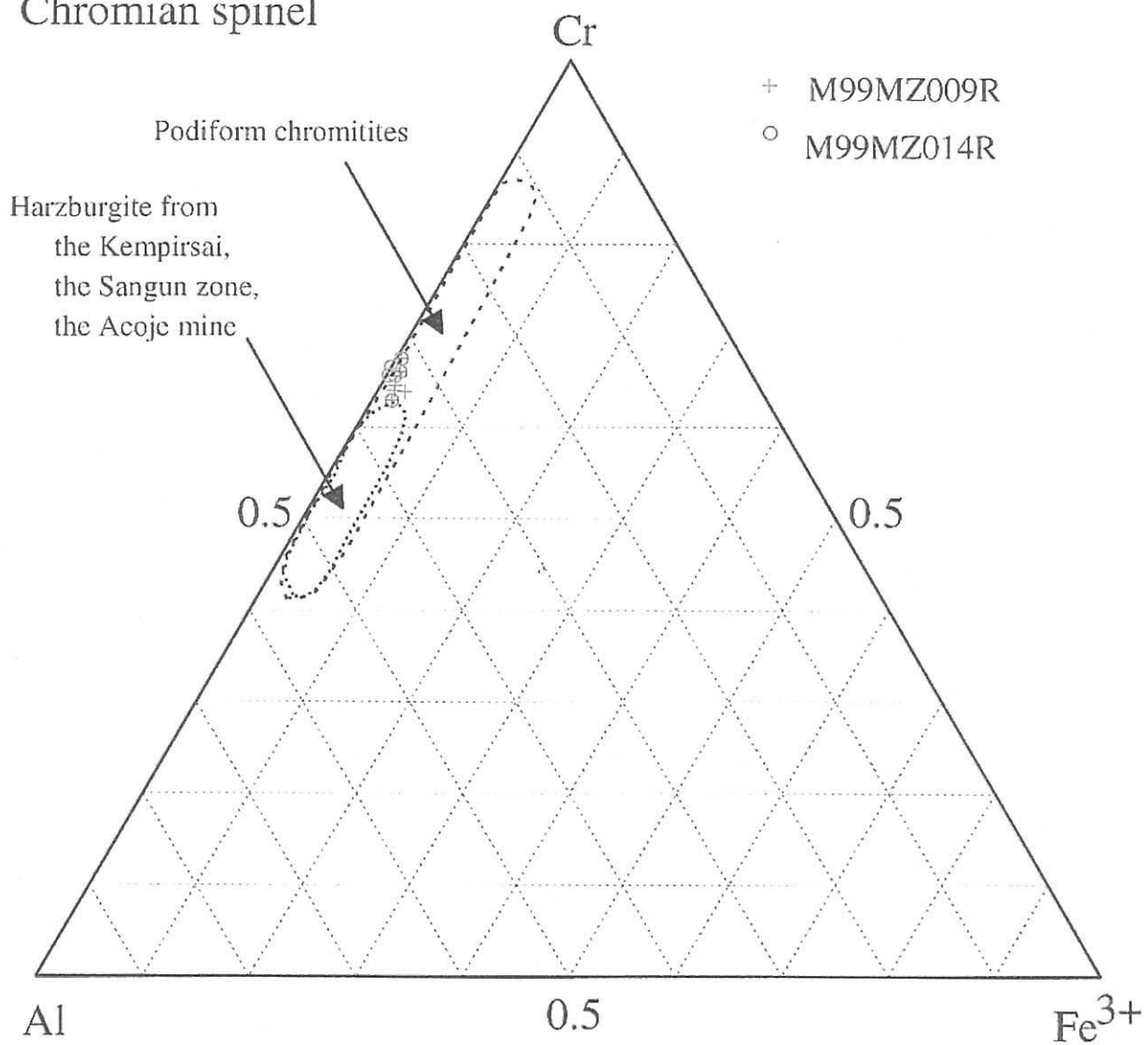


Fig. A-1 Diagram of Electron microprobe analysis for chromian spinel

Table A-21 Electron microprobe analyses for chromian spinel in ultramafic rocks

No.	1	2	3	4	5	6	7
Sample No.	1	3	4	5--1	5--1	6	6
M99MZ009R	CORE	RIM	CORE	CORE	RIM	CORE	RIM
Element	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)
SiO2	0.04	0.00	0.00	0.04	0.00	0.00	0.02
TiO2	0.02	0.03	0.00	0.08	0.00	0.00	0.03
Al2O3	18.69	19.66	19.08	18.67	19.13	18.26	17.39
Cr2O3	53.17	52.38	54.03	54.37	53.13	54.73	54.64
FeO	17.94	16.86	16.48	15.93	17.31	16.37	15.94
MnO	0.50	0.75	0.65	0.38	0.48	0.67	0.67
MgO	13.19	13.49	13.59	13.53	13.05	13.28	12.79
CaO	0.01	0.03	0.02	0.00	0.00	0.00	0.01
Na2O	0.00	0.03	0.02	0.02	0.00	0.00	0.06
K2O	0.01	0.00	0.00	0.00	0.02	0.01	0.03
total	103.56	103.23	103.88	103.01	103.11	103.31	101.59
O=	4	4	4	4	4	4	4
Si	0.001	0.000	0.000	0.001	0.000	0.000	0.001
Ti	0.001	0.001	0.000	0.002	0.000	0.000	0.001
Al	0.671	0.703	0.679	0.669	0.688	0.656	0.637
Cr	1.280	1.257	1.290	1.308	1.281	1.319	1.343
Fe	0.457	0.428	0.416	0.405	0.441	0.417	0.414
Mn	0.013	0.019	0.017	0.010	0.012	0.017	0.018
Mg	0.599	0.610	0.612	0.613	0.593	0.603	0.593
Ca	0.000	0.001	0.001	0.000	0.000	0.000	0.000
Na	0.000	0.002	0.001	0.001	0.000	0.000	0.003
K	0.000	0.000	0.000	0.000	0.001	0.000	0.001
total	3.022	3.020	3.016	3.009	3.016	3.013	3.011
Cr#	0.656	0.641	0.655	0.661	0.651	0.668	0.678
Fe3+ sp	0.053	0.038	0.029	0.017	0.033	0.022	0.010
Fe2+ sp	0.404	0.390	0.387	0.388	0.408	0.395	0.404
Fe2O3 wt %	2.298	1.654	1.275	0.764	1.458	0.964	0.436
FeO wt %	15.872	15.374	15.334	15.240	15.995	15.506	15.545

No.	8	9	10	11	12	13
sample No.	3	3	3	5--1	6	6
M99MZ014R	CORE	RIM	RIM	CORE	CORE	RIM
Element	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)
SiO2	0.00	0.00	0.00	0.04	0.00	0.02
TiO2	0.05	0.03	0.01	0.08	0.00	0.03
Al2O3	18.68	19.66	19.15	18.67	18.26	17.39
Cr2O3	55.49	52.38	54.92	54.37	54.73	54.64
FeO	15.31	16.86	15.95	15.93	16.37	15.94
MnO	0.70	0.75	0.48	0.38	0.67	0.67
MgO	13.49	13.49	13.34	13.53	13.28	12.79
CaO	0.00	0.03	0.00	0.00	0.00	0.01
Na2O	0.00	0.03	0.04	0.02	0.00	0.06
K2O	0.00	0.00	0.00	0.00	0.01	0.03
total	103.72	103.23	103.88	103.01	103.31	101.59
O=	4	4	4	4	4	4
Si	0.000	0.000	0.000	0.001	0.000	0.001
Ti	0.001	0.001	0.000	0.002	0.000	0.001
Al	0.665	0.703	0.681	0.669	0.656	0.637
Cr	1.325	1.257	1.309	1.308	1.319	1.343
Fe	0.387	0.428	0.402	0.405	0.417	0.414
Mn	0.018	0.019	0.012	0.010	0.017	0.018
Mg	0.607	0.610	0.599	0.613	0.603	0.593
Ca	0.000	0.001	0.000	0.000	0.000	0.000
Na	0.000	0.002	0.002	0.001	0.000	0.003
K	0.000	0.000	0.000	0.000	0.000	0.001
total	3.004	3.020	3.006	3.009	3.013	3.011
Cr#	0.666	0.641	0.658	0.661	0.668	0.678
Fe3+ sp	0.000	0.038	0.004	0.017	0.022	0.010
Fe2+ sp	0.389	0.390	0.398	0.388	0.395	0.404
Fe2O3 wt %	0.000	1.654	0.176	0.764	0.964	0.436
FeO wt %	15.399	15.374	15.789	15.240	15.506	15.545

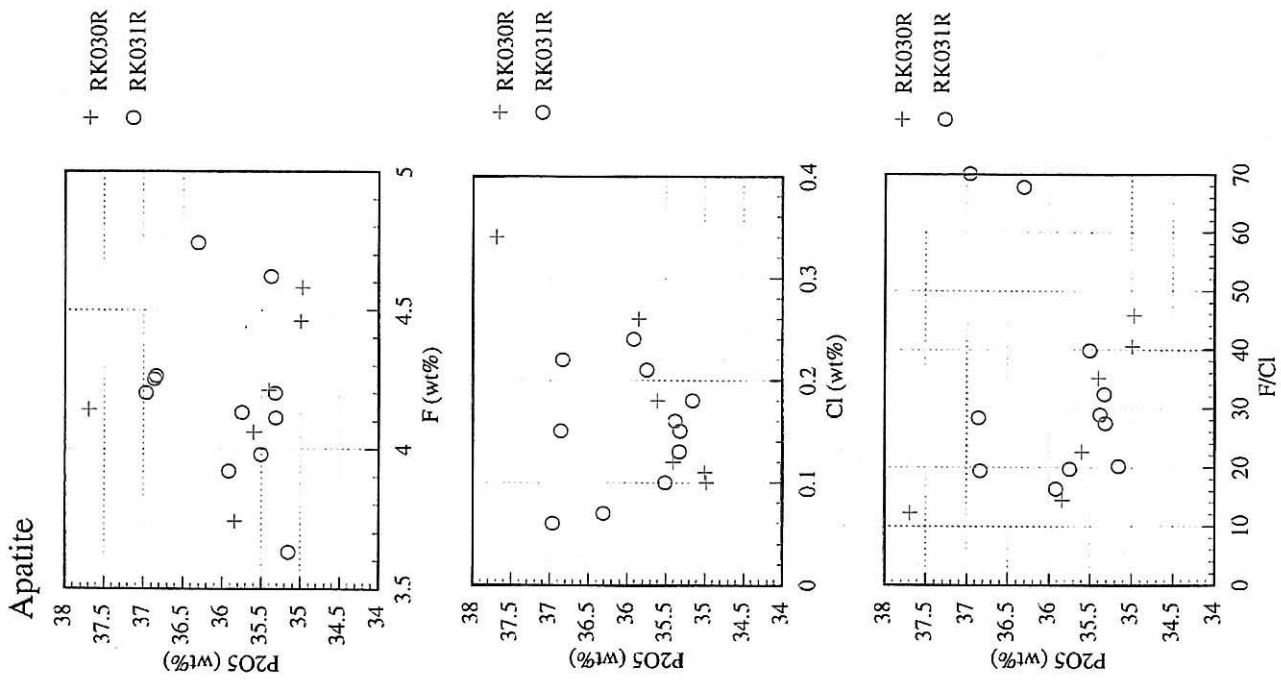
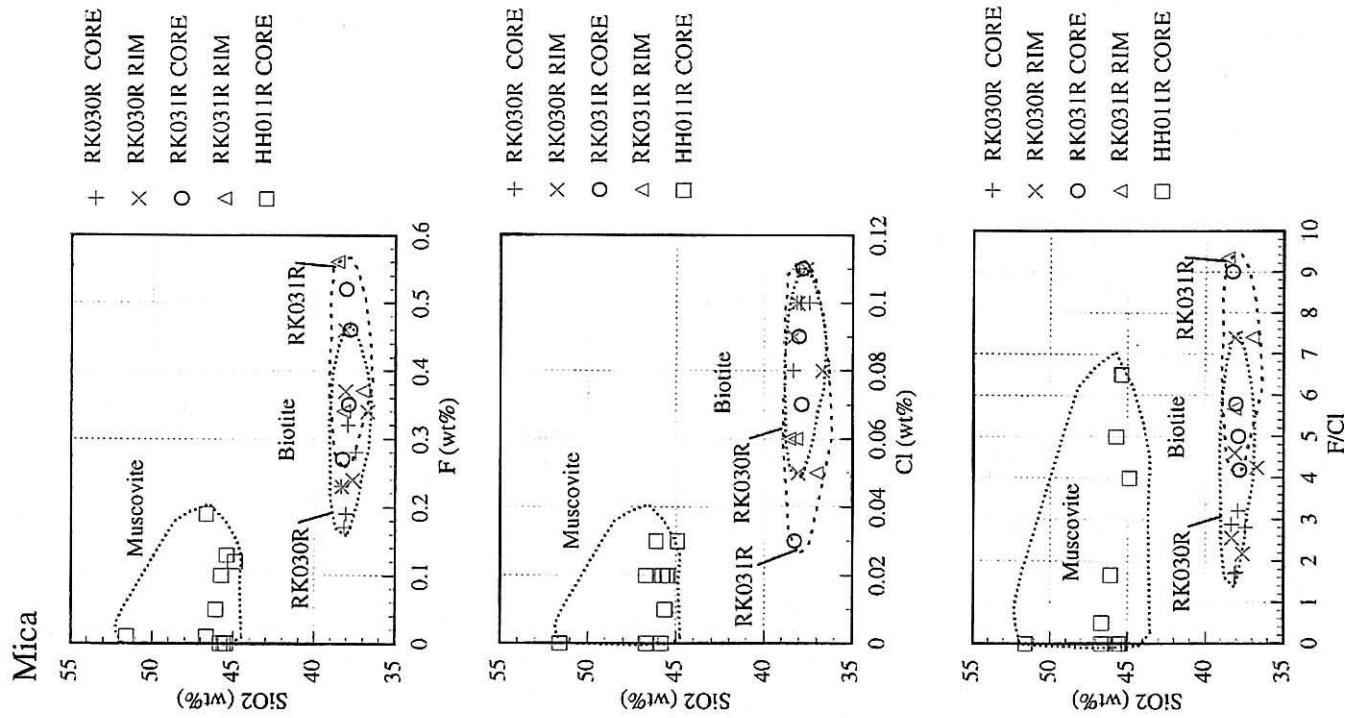


Fig. A-2 Diagrams of Electron microprobe analysis for biotite

Fig. A-3 Diagrams of Electron microprobe analysis for apatite

Table A-22a Electron microprobe analyses for mica (biotite) in granitic rocks

No.	1	2	3	4	5	6	7	8	9	10
Sample No.	5: RK030R	6: RK030R	7: RK030R	8: RK030R	9: RK030R	10: RK030R	11: RK030R	12: RK030R	16: RK030R	18: RK030R
	CORE	RIM	CORE	RIM	CORE	CORE	RIM	RIM	CORE	RIM
Element	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)
SiO <sub>2</sub>	38.01	38.11	38.12	37.62	38.32	37.90	38.07	38.30	37.42	36.70
Al <sub>2</sub> O <sub>3</sub>	14.30	14.74	14.11	14.17	14.25	13.91	14.47	14.48	13.63	14.01
TiO <sub>2</sub>	3.74	3.47	3.54	3.21	3.50	3.68	3.41	3.31	4.15	3.54
FeO	15.55	14.87	14.96	14.83	16.21	15.91	16.00	15.53	15.86	16.37
MnO	0.29	0.26	0.34	0.31	0.29	0.29	0.28	0.27	0.23	0.34
MgO	13.78	13.93	14.26	13.87	14.11	13.72	14.05	14.29	14.02	14.19
CaO	0.02	0.00	0.00	0.07	0.06	0.02	0.05	0.04	0.03	0.02
Na <sub>2</sub> O	0.12	0.09	0.13	0.09	0.14	0.10	0.09	0.12	0.08	0.06
K <sub>2</sub> O	8.78	8.93	8.72	7.99	8.59	8.73	8.25	8.82	8.95	7.91
P <sub>2</sub> O <sub>5</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.00
Cl	0.11	0.10	0.10	0.11	0.08	0.10	0.05	0.09	0.10	0.08
F	0.19	0.46	0.17	0.24	0.23	0.32	0.37	0.23	0.28	0.34
SO <sub>3</sub>	0.06	0.03	0.02	0.02	0.02	0.04	0.01	0.02	0.06	0.02
Total	94.95	94.97	94.45	92.51	95.79	94.71	95.10	95.50	94.84	93.59
O=	22	22	22	22	22	22	22	22	22	22
Si	6.222	6.230	6.251	6.273	6.226	6.239	6.216	6.227	6.163	6.117
Al	2.759	2.840	2.727	2.785	2.729	2.699	2.785	2.774	2.646	2.752
Ti	0.461	0.426	0.436	0.402	0.428	0.456	0.418	0.405	0.514	0.444
Fe	2.128	2.033	2.051	2.068	2.202	2.191	2.185	2.112	2.184	2.282
Mn	0.041	0.035	0.047	0.044	0.039	0.040	0.039	0.037	0.032	0.047
Mg	3.363	3.393	3.484	3.448	3.416	3.367	3.419	3.464	3.442	3.527
Ca	0.003	0.000	0.000	0.012	0.011	0.003	0.010	0.007	0.005	0.004
Na	0.037	0.028	0.040	0.029	0.043	0.031	0.027	0.039	0.027	0.020
K	1.834	1.863	1.823	1.699	1.781	1.834	1.719	1.828	1.880	1.682
P	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.000
Cl	0.032	0.027	0.027	0.032	0.021	0.029	0.014	0.024	0.029	0.023
F	0.099	0.237	0.090	0.124	0.120	0.167	0.193	0.117	0.145	0.178
S	0.007	0.003	0.002	0.003	0.002	0.005	0.001	0.002	0.008	0.003
Total	16.988	17.126	16.989	16.940	17.029	17.070	17.042	17.047	17.099	17.101

No.	11	12	13	14	15	16	17
Sample No.	27: RK031R	28: RK031R	33: RK031R	34: RK031R	37: RK031R	38: RK031R	47: RK031R
	CORE	RIM	CORE	RIM	CORE	RIM	CORE
Element	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)
SiO <sub>2</sub>	37.81	38.20	37.88	37.03	38.03	38.59	38.26
Al <sub>2</sub> O <sub>3</sub>	14.04	14.30	14.40	14.52	14.07	14.64	14.38
TiO <sub>2</sub>	3.64	3.11	3.59	3.22	4.02	2.97	3.40
FeO	16.52	15.90	16.32	16.96	16.19	16.23	15.36
MnO	0.24	0.13	0.21	0.17	0.24	0.24	0.30
MgO	13.23	14.14	13.45	13.83	13.51	14.11	13.91
CaO	0.07	0.01	0.01	0.01	0.01	0.03	0.03
Na <sub>2</sub> O	0.11	0.11	0.10	0.10	0.13	0.13	0.11
K <sub>2</sub> O	8.29	9.09	8.79	7.77	9.24	9.21	8.85
P <sub>2</sub> O <sub>5</sub>	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.11	0.06	0.07	0.05	0.09	0.06	0.03
F	0.46	0.34	0.35	0.37	0.52	0.56	0.27
SO <sub>3</sub>	0.02	0.02	0.00	0.02	0.02	0.04	0.01
Total	94.60	95.40	95.15	94.05	96.04	96.79	94.90
O=	22	22	22	22	22	22	22
Si	6.238	6.237	6.209	6.140	6.209	6.233	6.252
Al	2.730	2.753	2.782	2.837	2.708	2.788	2.769
Ti	0.452	0.383	0.443	0.402	0.493	0.360	0.418
Fe	2.280	2.171	2.237	2.352	2.211	2.193	2.099
Mn	0.033	0.018	0.029	0.023	0.033	0.033	0.042
Mg	3.254	3.442	3.287	3.418	3.287	3.398	3.389
Ca	0.012	0.002	0.002	0.002	0.001	0.005	0.006
Na	0.036	0.033	0.032	0.032	0.039	0.039	0.034
K	1.745	1.895	1.839	1.644	1.924	1.897	1.845
P	0.012	0.000	0.000	0.000	0.000	0.000	0.000
Cl	0.030	0.016	0.019	0.014	0.024	0.017	0.009
F	0.238	0.173	0.181	0.196	0.269	0.284	0.137
S	0.002	0.003	0.000	0.003	0.003	0.004	0.001
Total	17.078	17.143	17.083	17.079	17.210	17.266	17.022

Table A-22b Electron microprobe analyses for mica (muscovite) in granitic rocks

No.	21	22	23	24	25	26	27	28	29	30
Sample No.	79: HH011R	81: HH011R	83: HH011R	84: HH011R	85: HH011R	86: HH011R	87: HH011R	96: HH011R	97: HH011R	02: HH011R
Element	CORE		CORE		CORE		CORE		CORE	
	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)	Wt. (%)
SiO2	46.68	51.58	44.89	46.10	45.47	45.74	46.68	45.40	45.61	45.81
Al2O3	31.19	29.42	31.30	32.14	33.36	33.09	31.46	31.85	32.39	33.82
TiO2	0.63	0.09	0.50	0.57	0.68	0.62	0.41	0.61	0.40	0.41
FeO	3.44	1.54	4.24	3.66	3.18	2.92	3.31	3.79	3.65	3.38
MnO	0.00	0.02	0.05	0.00	0.00	0.02	0.03	0.08	0.06	0.00
MgO	1.84	2.24	2.14	1.46	0.79	1.03	1.69	2.00	1.61	0.91
CaO	0.00	0.15	0.00	0.00	0.02	0.00	0.01	0.04	0.01	0.01
Na2O	0.24	0.07	0.34	0.43	0.51	0.37	0.25	0.32	0.35	0.45
K2O	9.89	8.32	9.72	9.47	9.45	9.58	9.51	9.26	9.49	10.01
P2O5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.00	0.00	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.00
F	0.19	0.01	0.12	0.05	0.00	0.10	0.01	0.13	0.00	0.00
SO3	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.04	0.04	0.00
Total	94.07	93.63	93.37	93.96	93.59	93.58	93.55	93.56	93.66	94.93
O=	22	22	22	22	22	22	22	22	22	22
Si	6.930	7.470	6.763	6.843	6.759	6.797	6.939	6.782	6.793	6.738
Al	5.458	5.022	5.559	5.624	5.844	5.794	5.512	5.608	5.687	5.862
Ti	0.071	0.010	0.057	0.064	0.076	0.069	0.045	0.069	0.044	0.045
Fe	0.428	0.187	0.534	0.454	0.396	0.363	0.412	0.474	0.454	0.416
Mn	0.000	0.002	0.006	0.000	0.000	0.003	0.003	0.010	0.007	0.000
Mg	0.407	0.484	0.480	0.323	0.176	0.227	0.375	0.445	0.358	0.199
Ca	0.000	0.023	0.000	0.000	0.004	0.000	0.002	0.006	0.002	0.001
Na	0.069	0.021	0.098	0.124	0.148	0.108	0.071	0.091	0.101	0.129
K	1.872	1.537	1.868	1.794	1.793	1.817	1.804	1.765	1.802	1.879
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cl	0.000	0.000	0.008	0.008	0.005	0.006	0.005	0.005	0.002	0.000
F	0.088	0.006	0.057	0.022	0.000	0.047	0.004	0.063	0.000	0.000
S	0.000	0.001	0.000	0.000	0.002	0.000	0.000	0.004	0.004	0.000
Total	15.327	14.782	15.445	15.266	15.211	15.245	15.194	15.331	15.261	15.284

Table A-23 Electron microprobe analyses for apatite in granitic rock

No.	1	2	3	4	5	6	7	8	9
Sample No.	1: RK030R	2: RK030R	4: RK030R	14: RK030R	15: RK030R	20: RK030R	29: RK031R	30: RK031R	32: RK031R
Element	CORE Wt. (%)	RIM Wt. (%)	CORE Wt. (%)	in BT RIM Wt. (%)	in BT RIM Wt. (%)	in BT RIM Wt. (%)	in CHL Wt. (%)	in CHL Wt. (%)	in CHL Wt. (%)
SiO <sub>2</sub>	0.10	0.05	0.15	0.15	0.07	0.15	0.20	0.15	0.23
Al <sub>2</sub> O <sub>3</sub>	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.03
TiO <sub>2</sub>	0.00	0.07	0.00	0.00	0.00	0.03	0.00	0.01	0.00
FeO	0.18	0.03	0.47	0.19	0.10	0.21	0.09	0.16	0.10
MnO	0.07	0.11	0.06	0.02	0.10	0.08	0.11	0.07	0.09
MgO	0.01	0.03	0.01	0.00	0.01	0.00	0.03	0.01	0.00
CaO	55.14	55.23	54.63	55.23	54.48	55.04	55.05	54.69	54.35
Na <sub>2</sub> O	0.04	0.02	0.06	0.01	0.09	0.10	0.16	0.10	0.00
K <sub>2</sub> O	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01
P <sub>2</sub> O <sub>5</sub>	34.99	35.40	34.97	35.60	35.84	37.69	36.84	36.86	36.97
Cl	0.11	0.12	0.10	0.18	0.26	0.34	0.22	0.15	0.06
F	4.46	4.21	4.58	4.06	3.74	4.14	4.26	4.25	4.20
SO <sub>3</sub>	0.16	0.00	0.13	0.13	0.11	0.23	0.19	0.16	0.10
Total	95.26	95.30	95.16	95.58	94.80	98.02	97.15	96.62	96.14
O=	26	26	26	26	26	26	26	26	26
Si	0.018	0.010	0.026	0.027	0.013	0.026	0.035	0.026	0.040
Al	0.001	0.006	0.000	0.001	0.002	0.001	0.000	0.000	0.007
Ti	0.000	0.009	0.000	0.000	0.000	0.004	0.000	0.001	0.000
Fe	0.026	0.004	0.071	0.028	0.015	0.030	0.014	0.023	0.015
Mn	0.011	0.016	0.009	0.002	0.015	0.012	0.016	0.010	0.013
Mg	0.002	0.008	0.001	0.000	0.001	0.000	0.007	0.003	0.000
Ca	10.584	10.556	10.508	10.488	10.382	10.111	10.246	10.218	10.170
Na	0.013	0.008	0.021	0.005	0.030	0.033	0.054	0.034	0.000
K	0.000	0.001	0.000	0.001	0.001	0.000	0.001	0.003	0.001
P	5.307	5.346	5.314	5.342	5.397	5.471	5.417	5.442	5.467
Cl	0.033	0.036	0.031	0.053	0.079	0.099	0.065	0.046	0.017
F	2.528	2.372	2.600	2.277	2.104	2.246	2.338	2.341	2.318
S	0.022	0.000	0.017	0.017	0.014	0.030	0.025	0.022	0.013
Total	18.545	18.372	18.608	18.258	18.061	18.065	18.219	18.172	18.065

No.	10	11	12	13	14	15	16	17
Sample No.	35: RK031R	40: RK031R	48: RK031R	52: RK031R	56: RK031R	58: RK031R	62: RK031R	70: RK031R
Element	in BT Wt. (%)	in BT RIM Wt. (%)	CORE Wt. (%)	CORE Wt. (%)	CORE Wt. (%)	CORE Wt. (%)	CORE Wt. (%)	in BT RIM Wt. (%)
SiO <sub>2</sub>	0.19	0.09	0.16	0.18	0.17	0.19	0.14	0.29
Al <sub>2</sub> O <sub>3</sub>	0.00	0.01	0.00	0.01	0.02	0.00	0.00	0.00
TiO <sub>2</sub>	0.02	0.01	0.03	0.00	0.00	0.02	0.02	0.02
FeO	0.26	0.12	0.10	0.17	0.14	0.02	0.17	0.19
MnO	0.18	0.09	0.14	0.11	0.03	0.07	0.12	0.11
MgO	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00
CaO	54.53	55.51	54.71	55.06	54.73	55.33	55.06	54.64
Na <sub>2</sub> O	0.27	0.01	0.04	0.03	0.16	0.09	0.07	0.11
K <sub>2</sub> O	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.02
P <sub>2</sub> O <sub>5</sub>	35.16	36.31	35.38	35.32	35.51	35.33	35.92	35.75
Cl	0.18	0.07	0.16	0.15	0.10	0.13	0.24	0.21
F	3.63	4.74	4.62	4.11	3.98	4.20	3.92	4.13
SO <sub>3</sub>	0.56	0.06	0.06	0.08	0.21	0.24	0.15	0.13
Total	95.02	97.02	95.40	95.22	95.05	95.65	95.79	95.58
O=	26	26	26	26	26	26	26	26
Si	0.034	0.016	0.029	0.032	0.030	0.035	0.024	0.051
Al	0.000	0.002	0.000	0.001	0.003	0.000	0.000	0.000
Ti	0.002	0.001	0.005	0.000	0.000	0.003	0.003	0.002
Fe	0.039	0.018	0.015	0.025	0.021	0.002	0.025	0.028
Mn	0.027	0.013	0.020	0.016	0.004	0.011	0.017	0.016
Mg	0.000	0.002	0.000	0.000	0.001	0.007	0.001	0.000
Ca	10.370	10.426	10.477	10.510	10.426	10.521	10.413	10.367
Na	0.093	0.005	0.014	0.011	0.056	0.032	0.024	0.039
K	0.005	0.000	0.000	0.002	0.001	0.000	0.002	0.004
P	5.283	5.389	5.354	5.328	5.346	5.309	5.367	5.359
Cl	0.055	0.020	0.047	0.045	0.029	0.039	0.070	0.062
F	2.039	2.627	2.614	2.316	2.237	2.355	2.186	2.310
S	0.075	0.008	0.008	0.011	0.028	0.032	0.020	0.017
Total	18.030	18.530	18.586	18.317	18.189	18.345	18.152	18.264



Table A-24 K-Ar radiometric age

			<sup>40</sup> Ar (radiogenic)	
Sample	K(wt%)	nL/g	%Total	Age (Ma)
M99MZ051R (Biot conc)	1.66	15.2603	73	223 ± 6
M99MZ051R (fsp+qtz conc)	2.66	22.0850	56	202 ± 4

Decay constant <sup>40</sup>K:  $\lambda_{\beta} = 0.4962 \times 10^{-9}$ ,  $\lambda_{e} = 0.581 \times 10^{-10} \text{ yr}^{-1}$ .

Isotopic abundance: <sup>40</sup>K/K = 0.01167% (atomic).

Errors are 2 standard deviations.

Biot conc sample has an error of 2.7%. The analyst suspects that the error is slightly larger in this sample because of some chlorite contaminant within the the biotite.

			<sup>40</sup> Ar (radiogenic)	
Sample(Bulk)	K(wt%)	nL/g	%Total	Age (Ma)
M99NK041	1.80	15.5539	49	210 ± 4
M99NK052	2.36	27.9509	65	282 ± 6
M99NK067	2.35	18.7434	50	195 ± 4
M99NK083	2.17	18.3144	43	205 ± 4

Decay constants <sup>40</sup>K:  $\lambda_{\beta} = 0.4962 \times 10^{-9}$ ,  $\lambda_{e} = 0.581 \times 10^{-10} \text{ yr}^{-1}$ .

Isotopic abundance: <sup>40</sup>K/K = 0.01167% (atomic).

Errors are 2 standard deviations.

Table A-25 Calculation of  $\delta^{18}\text{O}$  water based on the isotopic data and fluid inclusion data

Sample	Area	Type	$\delta^{18}\text{O}$ (‰) qz	Range T°C	Average T°C	$\delta^{18}\text{O}$ (‰) qz-water	$\delta^{18}\text{O}$ (‰) water	NaCl (wt%)
M99NK003M	Zaamar	quartz vein	15.1	136~184	158.2	14.7	0.4	3.60
M99NK003M	Zaamar	quartz vein	15.3	136~184	158.2	14.7	0.6	3.60
M99NK003M	Zaamar	quartz vein	16.2	136~184	158.2	14.7	1.5	3.60
M99NK003M	Zaamar	quartz vein	16.6	136~184	158.2	14.7	1.9	3.60
M99NK005M	Zaamar	quartz vein	18.6	109~151	127.2	17.5	1.1	2.51
M99NK005M	Zaamar	quartz vein	18.6	109~151	127.2	17.5	1.1	2.51
M99NK005M	Zaamar	quartz vein	18.7	109~151	127.2	17.5	1.2	2.51
M99NK005M	Zaamar	quartz vein	18.7	109~151	127.2	17.5	1.2	2.51
M99MZ008M	Altgana Gol	quartz vein	7.6	142~206	183.0	12.8	-5.2	9.34
M99MZ008M	Altgana Gol	quartz vein	7.9	142~206	183.0	12.8	-4.9	9.34
M99MZ008M	Altgana Gol	quartz vein	8.4	142~206	183.0	12.8	-4.4	9.34
M99MZ016M	Erdenet NW	quartz vein	4.3	132~172	151.2	15.3	-11.0	1.97
M99MZ016M	Erdenet NW	quartz vein	4.9	132~172	151.2	15.3	-10.4	1.97
M99MZ016M	Erdenet NW	quartz vein	5.5	132~172	151.2	15.3	-9.8	1.97
M99MZ016M	Erdenet NW	quartz vein	5.9	132~172	151.2	15.3	-9.4	1.97
M99MZ065M	Tsookher Mert	quartz vein	3.0	145~195	169.3	13.8	-10.8	0.16
M99MZ065M	Tsookher Mert	quartz vein	4.5	145~195	169.3	13.8	-9.3	0.16
M99MZ065M	Tsookher Mert	quartz vein	5.8	145~195	169.3	13.8	-8.0	0.16

$\delta^{18}\text{O}$  (‰) qz-water : Oxygen isotopic fractionation factor between quartz and water (Matsuhisa et al., 1979).

$\delta^{18}\text{O}$  (‰) values of muscovite in quartz vein of M99NK003M are +11.8‰ to +11.9‰, calculated temperature by oxygen isotopic fractionation factor between quartz and muscovite (Kieffer, 1982) are 144°C to 230°C.

Table A-26 Measurement of  $\delta^{34}\text{S}$  for granitic rocks and pyrite

Sample	Area	Type	Mineralization	$\delta^{34}\text{S}$ (‰)	S (%)
M99HH008R	Erdenet NW	Selenge Complex	-	7.2	0.005
M99MZ017R	Erdenet NW	Erdenet Complex	+	-1.8	0.17
M99MZ041R	Erdenet SE	Erdenet Complex	+	-4.8	1.25
M99MZ044R	Erdenet SE	Selenge Complex	-	3.3	0.001
M99MZ036R	Under	Selenge Complex	-	4.6	0.01
M99MZ039R	Under	Erdenet Complex	-	3.8	0.001
M99MZ016M	Erdenet NW	Pyrite		-0.7	
M99MZ016M	Erdenet NW	Pyrite		-0.5	
M99MZ016M	Erdenet NW	Pyrite		-0.5	