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ALUMINA

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = Total

#	Number	Al_2O_3	Be*	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO*	Na_2O	P*	P_2O_5	SiO_2	TiO_2	LOI	Units
2	CERAM AN27	99.84	.	0.06	.	0.03	<0.01	<0.01	.	0.02	.	.	0.05	<0.01	.	25 or 100 g
2	CERAM AN26	99.8	.	0.06	.	0.04	<0.01	<0.01	.	0.03	.	.	0.09	<0.01	.	25 or 100 g
2	CERAM AN25	99.4	.	0.05	.	0.03	<0.01	0.01	.	0.53	.	0.05	<0.01	<0.01	.	25 or 100 g
1	CMSI 1778	90.58	.	0.16	.	1.82	0.12	0.38	.	0.19	.	.	4.20	2.13	.	90 g
1	NCS DC62107	83.90	.	0.99	.	3.91	0.38	0.46	.	0.11	.	.	4.97	4.19	0.44	20 g
1	CMSI 1770	79.26	.	0.060	.	1.12	.	0.077	.	.	.	0.148	1.49	3.05	14.38	60 g
1	VS SH12/2	73.4	.	16.6	0.46	0.65	.	2.16	.	.	.	.	0.76	.	.	100 g
1	SRM 699 *	.	2.81	0.036	.	0.013T	(0.005)	0.0006	5	0.59	2	.	0.0120	(0.001)	0.69	60 g
1	DSZU 123.45-03	.	.	.	2.7*	0.02	V2O5: 3.7*		2.3	0.33	.	4.0*	0.022	0.0046	.	50 g
	the below are available in SET/5 ONLY															
1	DSZU 123.46-03-1	.	.	.	.	0.022	.	.	.	0.20	.	.	0.020	.	.	30 g
1	DSZU 123.46-03-2	.	.	.	.	0.022	.	.	.	0.33	.	.	0.021	.	.	30 g
1	DSZU 123.46-03-3	.	.	.	.	0.037	.	.	.	0.44	.	.	0.037	.	.	30 g
1	DSZU 123.46-03-4	.	.	.	.	0.055	.	.	.	0.47	.	.	0.054	.	.	30 g
1	DSZU 123.46-03-5	.	.	.	.	0.090	.	.	.	0.72	.	.	0.077	.	.	30 g

* SRM 699 also contains Cr_2O_3: 0.0002, Ga_2O_3 0.010, Li_2O: 0.002, V_2O_5: 0.0005, and ZnO: 0.013

CRM ANDALUSITE

100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	SiO_2	TiO_2	LOI
SARM 34	59.15	(0.13)	0.75	0.23	0.13	0.093	39.04	0.16	0.62

CRM ANDESITE

analysis listed in mass %

Number	Si	SiO_2	Al	Al_2O_3	CO_2	CaO	Fe	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
JA-1	29.90	63.97	8.06	15.22	.	5.70	4.95	3.98	2.59	7.07	+0.72 -0.30	0.77	1.57	0.157	3.84	0.165	0.85	.
GBW 07110	.	63.06	.	16.1	1.03	2.47	.	0.19	4.51	.	1.79	5.17	0.84	0.089	3.06	0.36	0.80	.
JA-3	29.11	62.27	8.23	15.56	.	6.24	4.62	4.83	1.15	6.60	+0.20 -0.11	1.41	3.72	0.104	3.19	0.116	0.70	.
GBW 07104	.	60.62	.	16.17	3.47	5.20	.	2.39	.	4.90	+(1.5)	1.89	1.72	.	3.86	.	.	4.44
US AGV-2	27.7	59.3	8.95	16.91	.	5.20	4.68	.	.	6.69	.	2.88	1.79	.	4.19	0.48	1.05	.
USZ 48-2009	.	59.20	.	16.72	.	5.58	.	(1.66)	.	5.43	. .	2.42	3.52	0.081	4.46	0.264	0.71	1.39
JA-2	26.37	56.42	8.16	15.41	.	6.29	4.34	3.69	2.16	6.21	+1.12 -1.25	1.81	7.60	0.108	3.11	0.146	0.66	.

continued analysis listed in mg/kg except * which is ppb and % which is mass %

Number	Ag	As	Au*	B	Ba	Be	Bi	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu
JA-1	.	2.78	0.16	21.0	311	0.50	.	4.07	0.11	13.3	43.0	12.3	7.83	0.62	43.0	4.55	3.04	1.20
GBW 07110	0.17	5.96	.	10.8	1053	3.64	0.09	.	0.61	117	160	7.9	7.7	7.16	9.1	5.32	2.93	1.96
JA-3	0.084	.	.	24.8	323	0.80	.	4.46	.	22.8	.	21.1	66.2	2.08	43.4	3.01	1.57	0.82
GBW 07104	0.071	2.1	(0.95)	4.7	1020	1.1	0.081	.	0.061	40	(46)	13.2	32	2.3	55	1.85	0.85	1.02
US AGV-2	.	.	.	.	1140	2.3	.	3.72	.	68	.	16	17	(1.16)	53	3.6	(1.79)	(1.54)
USZ 48-2009	(0.08)	(3.64)	.	.	672	(2.01)	(0.12)	.	(0.06)	55.2	.	19.2	95.9	1.09	41.2	(2.55)	(1.18)	1.44
JA-2	.	.	0.26	20.7	321	2.05	.	4.50	.	32.7	.	29.5	436	4.63	29.7	2.80	1.48	0.93

Number	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	K%	La	Li	Lu	Mg%	Mn%	Mo	Na%	Nb
JA-1	161	16.7	4.36	1.33	2.42	.	0.95	.	.	0.64	5.24	10.8	0.47	0.95	0.122	1.59	2.85	1.85
GBW 07110	1120	19.8	6.54	1.11	7.5	0.014	1.10	0.07	0.11	.	62.2	17.5	0.49	.	.	0.95	.	20.8
JA-3	.	16.3	2.96	.	3.42	.	0.51	.	.	1.17	9.33	14.5	0.32	2.24	0.081	1.89	2.37	3.41
GBW 07104	280	18.1	2.7	0.93	2.9	0.012	0.34	(0.14)	0.037	.	22	18.3	0.12	.	0.0604	0.54	.	6.8
US AGV-2	(440)	20	(4.69)	.	(5.08)	.	(0.71)	.	.	2.39	38	(11)	(0.25)	1.08	0.0770	.	3.11	15
USZ 48-2009	.	21.1	(3.93)	.	3.80	(0.004)	(0.46)	.	.	.	26.2	(13.2)	(0.15)	.	.	(0.60)	.	3.23
JA-2	.	16.9	3.06	.	2.86	.	0.50	.	.	1.50	15.8	27.3	0.27	4.58	0.084	0.60	2.31	9.47

Number	Nd	Ni	P%	Pb	Pr	Rb	S	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti%
JA-1	10.9	.	0.072	6.55	1.71	12.3	21.6	0.22	28.5	.	3.52	.	263	0.13	0.75	.	0.82	0.51
GBW 07110	47.2	12.6	.	97.7	13.2	183	230	1.34	7.52	0.03	8.63	3.12	318	1.42	0.99	.	16.7	.
JA-3	12.3	32.2	0.051	7.70	2.40	36.7	.	.	22.0	.	3.05	.	287	0.27	0.52	.	3.25	0.42
GBW 07104	19	17	0.1030	11.3	4.9	38	192	0.12	9.5	(0.04)	3.4	0.79	790	0.40	0.41	0.017	2.6	0.3090
US AGV-2	30	19	0.21	13	8.3	68.6	.	(0.6)	13	.	(5.7)	(2.3)	658	(0.89)	(0.64)	.	6.1	0.63
USZ 48-2009	27.2	61.2	.	18.7	(6.77)	49.7	.	(0.27)	11.8	.	5.16	(0.86)	1116	(0.25)	0.49	.	6.46	.
JA-2	13.9	130	0.064	19.2	3.84	72.9	.	.	19.6	.	3.11	1.68	248	0.80	0.44	.	5.03	0.40

Number	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
JA-1	.	0.47	0.34	105	.	30.6	3.03	90.9	88.3	20 g
GBW 07110	1.02	0.50	3.04	64.3	1.62	28.0	3.15	164	335	100 g
JA-3	.	.	1.18	169	.	21.2	2.16	67.7	118	20 g
GBW 07104	0.16	0.15	0.90	94	(0.45)	9.3	0.89	71	99	70 g
US AGV-2	(0.27)	(0.26)	1.88	120	.	20	1.6	86	230	30 g
USZ 48-2009	(0.22)	(0.17)	1.96	123	(1.70)	11.8	1.00	71.5	141	100 g
JA-2	0.32	0.28	2.21	126	.	18.3	1.62	64.7	116	20 g

CRM ANHYDRITE

analysis listed in mass % — 50 g units

Number	Al_2O_3	CO_2	CaO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	SO_3	SiO_2	Sr	TiO_2
GUW AN	(0.023)	0.65	40.7	0.014	(0.5)	0.013	0.34	(0.002)	0.032	57.6	(0.22)	0.14	(0.003)

continued — analysis listed in mg/kg

Number	B	Ba	Cl	Cr	Cs	Cu	Ga	Li	Mo	Rb	Sb	Ta	Th	V	Zn	Zr
GUW AN	100	14.8	0.033	0.90	0.037	4	4.3	9	1.2	4.7	0.044	0.007	0.048	18	7.9	13

CRM ANORTHOSITE

analysis listed in mass % — 40 g units

Number	SiO_2	Al_2O_3	Ba	CaO	CO_2	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	H_2O+	$T.H_2O$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
VS MO11	53.46	27.42	0.0319	10.95	0.0	1.09	0.53	1.74	0.088	0.33	0.42	0.65	0.49	0.037	4.39	0.041	0.0100	0.18
VS 2120-81	51.77	22.78	0.051	10.06	0.36	4.66	6.26	.	0.40	.	.	0.76	2.10	0.076	4.04	0.140	0.069	1.87
VS MO10	51.65	23.91	0.0294	10.18	0.14	4.40	1.45	6.34	0.095	0.26	0.36	0.50	2.24	0.073	3.99	0.13	0.0460	0.83

continued — analysis listed in mg/kg except % which is mass %

Number	B	Be	Cl	Co	Cr	Cs	Cu	F	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	V%	Y	Yb	Zn	Zr
VS MO11	4.5	0.8	240	9.6	12	0.73	26	420	21	20	7.5	1.2	2.6	14	6.8	2.7	5	5.1	(802)	0.0024	8	1.1	50	42
VS 2120-81	.	0.9	.	23	36	.	31	.	17	.	.	.	.	10	7	.	23	.	.	0.013	.	.	83	72
VS MO10	8.7	1.1	240	27	23	0.55	44	380	26	24	7.1	2.0	3.9	32	8.0	5.5	11	5.0	477	0.0109	17	2.0	96	58

CRM ANTIMONY ORE

analysis listed in mass % — 200 g units

Number	Al	As	C	Ca	Cu	Fe	H_2O	K	Mg	Na	Pb	S	Sb	Si	LOI
CAN CD-1	(5.5)	0.66	(0.2)	(1.4)	(<0.01)	(2.8)	(0.2)	(1.8)	(0.6)	(0.1)	(0.02)	(3.1)	3.57	(32.9)	(4.0)

CRM ANTIMONY ORE

Number	Al_2O_3	CaO	Cu	F	Tot.Fe	K_2O	Mg	MnO	Na_2O	P	Pb	S	Sb	SiO_2	TiO_2	Units
NCS DC70012	9.69	0.18	.	0.064	2.91	2.70	0.75	0.046	0.08	(0.035)	.	2.25	6.26	71.03	0.44	100 g
NCS DC70013	.	.	0.12	.	.	.	.	.	.	.	0.037	1.02	1.81	.	.	100 g

CRM ARAGONITE

100 g units

Number	Al_2O_3	CO_2	CaO	F	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	S	SiO_2	SrO	LOI
UNS AK	0.11	43.0	54.9	0.20	0.130	0.037	0.110	0.047	0.029	0.046	0.64	0.28	43.27

CRM ARSENIC ORE

analysis listed in mass % — 100 g units

Number	Al_2O_3	As	CaO	Cu	F	Tot.Fe	K_2O	Mg	MnO	Na_2O	P	Pb	S	Sb	SiO_2	TiO_2	Zn
NCS DC70010	2.66	9.33	27.56	0.014	0.029	1.24	0.51	8.59	0.060	0.32	(0.022)	0.016	4.60	0.037	13.74	0.096	0.033
NCS DC70011	.	5.35	.	.	.	.	.	.	.	.	.	0.010	2.81	0.016	.	.	0.023

CRM BASALT

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	H_2O+	T.H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	
US BCR-2	54.1	13.5	.	7.12	.	.	13.8	.	.	.	1.79	3.59	.	3.16	0.35	2.26	
JB-2	53.25	14.64	.	9.82	9.98	3.33	14.25	0.13(-)	0.25	.	0.42	4.62	0.218	2.04	0.101	1.19	
USZ 46-2008	51.85	14.50	.	5.41	6.15	9.85	.	.	.	.	3.99	6.33	0.13	4.40	0.85	2.11	
JB-1b	51.11	14.38	.	9.6	5.16	3.29	9.02	1.06(-)	1.53	.	1.32	8.14	0.147	2.63	0.256	1.26	
JB-3	50.96	17.20	.	9.79	7.85	3.20	11.82	0.07(-)	0.18	.	0.78	5.19	0.177	2.73	0.294	1.44	
US BHVO-2	49.9	13.5	.	11.4	.	.	12.3	.	.	.	0.52	7.23	.	2.22	0.27	2.73	
VS MO12	49.87	16.74	0.0	8.73	6.82	2.96	10.54	0.095	0.18	0.28	1.12	7.38	0.14	3.85	0.45	1.61	Andesite
GUW BM	49.51	16.25	1.35	6.47	7.28	9.67	.	3.62	.	.	0.20	7.47	0.140	4.65	0.106	1.14	
VS MO13	49.50	17.92	0.0	9.08	5.83	3.88	10.47	0.16	0.27	0.43	0.95	5.85	0.14	3.90	0.40	1.66	Olivine
VS 2116-81	49.15	16.53	(0.13)	18.87	7.71	1.07	.	1.34	.	.	0.98	6.56	0.164	3.74	0.40	1.65	
SRM 688	48.4	17.36	.	(12.17)	7.64	10.35	.	.	.	.	0.187	(8.4)	.	2.15	0.134	1.17	
US BIR-1a	47.96	15.5	.	13.3	8.34	2.06	11.3	.	.	.	0.030	9.70	0.175	1.82	0.021	0.96	
VS MO14	46.85	17.06	0.0	9.60	6.83	3.26	10.85	0.81	1.73	2.54	0.46	8.05	0.15	3.00	0.37	1.62	Olivine
GBW 07105	44.64	13.83	(0.19)	18.81	7.60	.	13.40	.	2.86	.	2.32	7.77	.	3.38	.	.	
VS MO15	40.55	19.03	0.20	0.30	4.90	4.09	10.07	0.32	1.34	1.66	1.51	5.23	0.059	4.39	0.39	1.68	Porph. Andesite

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	Al%	As	Au*	B	Ba	Be	Bi	C	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu
US BCR-2	.	7.14	.	.	.	683	.	.	.	5.09	.	53	.	37	18	(1.1)	(19)
JB-2	(0.072)	7.75	2.87	5.64	30.2	222	(0.26)	.	(218)	7.02	0.14	6.76	281	38.0	28.1	0.85	225
USZ 46-2008	.	.	.	.	.	772	2.81	.	.	.	.	103	.	36.3	222	1.15	32.21
JB-1b	.	.	1.24	.	.	.	1.3	.	419	.	.	.	.	40.3	439	1.21	55.5
JB-3	0.075	9.10	1.84	1.99	18.0	245	0.81	.	(120)	7.00	0.081	21.5	(259)	34.3	58.1	0.94	194
US BHVO-2	.	7.16	.	.	.	130	.	.	.	8.17	.	38	.	45	280	.	127
VS MO12	.	.	.	.	9.3	311	2.3	.	.	.	.	.	240	44	181	0.6	54
GUW BM	(0.8)	.	13	.	(12)	250	1.3	.	.	.	.	.	.	36	121	2.0	43
VS MO13	.	.	.	.	9.3	272	2.6	.	.	.	.	.	340	47	115	0.9	60
VS 2116-81	.	.	.	.	.	300	2.3	.	.	.	.	.	.	37	99	.	61
SRM 688	.	.	.	.	.	.	.	.	.	.	.	.	.	.	332	.	.
US BIR-1a	.	.	(0.44)	.	(0.33)	(6)	(0.58)	.	.	.	.	1.9	(26)	52	370	.	125
VS MO14	.	.	.	.	8.7	172	1.9	.	.	.	.	.	260	50	152	1.5	66
GBW 07105	0.040	.	(0.7)	(0.66)	3.5	527	2.5	0.048	.	.	0.067	105	(114)	46.5	134	(0.7)	49
VS MO15	.	.	.	.	9.9	225	2.2	.	.	.	.	.	650	34	136	1.4	28

Number	Dy	Er	Eu	F%	Fe	Ga	Gd	Ge	Hf	Hg	Ho	In	K%	La	Li	Lu	Mg%
US BCR-2	.	.	2.0	(0.0440)	9.65	23	6.8	.	(4.8)	.	(1.33)	.	1.49	25	(9)	(0.51)	2.16
JB-2	3.73	2.60	0.86	0.00985	9.97	17.0	3.28	1.35	1.49	0.00478	0.75	.	0.35	2.35	7.78	0.40	2.79
USZ 46-2008	4.67	1.84	2.62	.	.	22.63	7.17	1.29	6.63	.	0.78	.	.	55.99	11.08	0.19	.
JB-1b	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10.8	.	.
JB-3	4.54	2.49	1.32	0.0253	8.27	19.8	4.67	1.12	2.67	(0.0024)	0.80	.	0.65	8.81	7.21	0.39	3.13
US BHVO-2	.	.	.	(0.0370)	8.63	21.7	(6.3)	.	4.1	.	(1.04)	.	0.43	15	(5)	(0.28)	4.36
VS MO12	.	.	.	0.0600	.	19	.	.	.	.	.	.	.	45	9.2	.	.
GUW BM	(4.6)	(2.7)	1.12	0.028	.	16	(5.8)	(1.3)	3.0	.	(1.4)	.	.	9	72	0.41	.
VS MO13	.	.	.	0.0520	.	20	.	.	.	.	.	.	.	40	15	.	.
VS 2116-81	.	.	.	0.0480	.	22	.	1.1	.	.	.	.	.	4.0	9.3	.	.
SRM 688	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US BIR-1a	4	.	0.55	(0.0044)	.	(16)	2	.	0.6	.	.	.	0.63	3.6	(0.3)	.	.
VS MO14	.	.	.	0.0470	.	15	.	.	.	.	.	.	34	7.5	.	.	.
GBW 07105	5.6	2.0	3.2	0.0700	.	24.8	8.5	0.98	6.5	0.006	0.88	0.064	56	9.5	0.19	.	
VS MO15	.	.	.	0.1600	.	20	.	.	.	.	.	.	69	16	.	.	

Number	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Rb	S	Sb	Sc	Se	Si%	Sm	Sn
US BCR-2	0.1520	248	2.34	.	28	.	0.15	(11)	(6.8)	48	.	.	33	.	25.3	(6.7)	.
JB-2	0.169	1.08	1.51	(1.58)	6.63	16.6	0.044	5.36	1.01	7.37	17.9	0.25	53.5	(0.19)	24.89	2.31	0.95
USZ 46-2008	.	5.20	.	52.21	46.62	162	.	8.70	11.90	63.05	.	0.28	10.10	.	.	8.72	2.66
JB-1b	.	.	.	.	.	148	.	6.8	.	39.1	10	0.2	.	.	.	.	.
JB-3	0.137	1.09	2.03	2.47	15.6	36.2	0.128	5.58	3.11	15.1	9.86	0.12	33.8	(0.069)	23.82	4.27	0.94
US BHVO-2	0.1290	.	1.64	(18)	25.0	119	0.12	.	.	9.8	.	.	32	.	23.3	(6.2)	(1.9)
VS MO12	.	3.9	.	14	.	137	.	11	.	16	60	.	22	.	.	.	3.9
GUW BM	.	(0.8)	.	.	15	57	.	13	(3.0)	10	.	2.3	34	.	.	3.6	.
VS MO13	.	3.0	.	13	.	76	.	9.3	.	13	60	.	22	.	.	.	3.2
VS 2116-81	.	1.8	.	.	.	86	.	12	.	14	(90)	.	22	.	.	.	7.0
SRM 688	0.167	.	.	.	.	.	.	.	.	1.91	.	.	.	.	.	.	.
US BIR-1a	.	.	.	(0.6)	2.5	170	.	(3)	.	.	.	(0.58)	44	.	.	(1.1)	.
VS MO14	.	2.5	.	11	.	111	.	8.6	.	4.0	60	.	25	.	.	.	2.4
GBW 07105	0.1310	2.6	.	68	54	140	0.4130	(7)	13.2	37	(100)	(0.08)	15.2	0.073	.	10.2	2.0
VS MO15	.	3.4	.	13	.	90	.	8.8	.	50	160	.	29	.	.	.	4.2

Number	Sr	Ta	Tb	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	LOI	Units
US BCR-2	346	.	(1.07)	6.2	1.35	.	(0.54)	1.69	416	.	37	3.5	127	188	.	50 g
JB-2	178	0.13	0.60	0.35	0.71	(0.042)	0.41	0.18	575	(0.26)	24.9	2.62	108	51.2	.	20 g
USZ 46-2008	927	3.20	0.95	6.95	.	0.12	0.23	1.64	105	1.15	20.48	1.34	114	287	.	100 g
JB-1b	439	.	.	.	.	.	.	.	214	.	.	.	80	.	.	100 g
JB-3	403	0.15	0.73	1.27	0.86	0.048	0.42	0.48	372	(1.06)	26.9	2.55	100	97.8	.	100 g
US BHVO-2	389	(1.4)	(0.9)	(1.2)	1.63	.	.	.	317	.	26	(20)	103	172	.	50 g
VS MO12	865	.	.	.	.	.	.	.	199	.	34	3.3	130	152	.	40 g
GUW BM	220	(0.3)	0.9	(3.0)	.	.	.	(1.1)	190	0.9	27	3.0	120	100	.	50 g
VS MO13	692	.	.	.	.	.	.	.	226	.	36	2.6	74	180	.	40 g
VS 2116-81	500	.	.	.	.	.	.	.	150	.	29	2.6	82	190	.	40 g
SRM 688	169.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	60 g
US BIR-1a	110	.	.	.	.	.	.	.	310	.	16	1.7	70	18	.	30 g
VS MO14	468	.	.	.	.	.	.	.	181	.	39	3.0	108	162	.	40 g
GBW 07105	1100	4.3	1.2	6.0	1.4200	(0.12)	0.28	1.4	167	(0.4)	22	1.5	150	277	(2.24)	70 g
VS MO15	554	.	.	.	.	.	.	.	234	.	39	2.6	33	152	.	40 g

CRM BASTNASITE CONCENTRATE

analysis listed in mass % 90 g units

Number	BaO	CO_2	CeO_2	Eu_2O_3	F	Fe_2O_3	Gd_2O_3	La_2O_3	MgO	Nd_2O_3	Pr_6O_{11}	SO_3	Sm_2O_3	ThO_2
IGS 41	1.58	20.12	32.24	0.075	4.37	0.42	0.151	20.9	0.265	7.61	2.74	1.215	0.52	0.121

BAUXITE

= class, where 1 = CRM and 2 = RM BCS, JCRM: 100 g CERAM: 25 or 100 g CETEM: 140 g GBAP: 10 g SRM 600: 90 g other SRM: 60 g

#	Number	Al_2O_3	$A.Al_2O_3$	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	$R.SiO_2$	TiO_2	V_2O_5	ZnO	ZrO_2	LOI
1	JCRM R302	90.6	.	0.02	.	1.76	0.02	0.03	.	0.02	0.05	.	3.45	.	3.17	.	.	0.30*	0.22
1	JCRM R303 **	89.49	.	0.012	.	1.51	.	0.006	.	.	0.064	.	5.55	.	2.93	.	.	0.110*	.
2	CERAM 2CAS2	89.0	.	0.10	.	1.74	0.02	0.08	.	0.01	.	.	5.93	.	3.14	.	.	.	0.10
1	BCS 394	88.8	.	0.08	(0.08)	1.90	0.02	0.12	.	0.02	.	.	4.98	.	3.11	.	.	.	.
2	CERAM AN29	88.6	.	0.07	.	1.72	0.03	0.09	.	0.04	.	.	6.17	.	3.28	.	.	.	0.09
1	JCRM R301	87.5	.	0.03	.	1.40	0.04	0.02	.	0.03	0.07	.	7.24	.	2.90	.	.	0.13*	0.35
1	GBAP-6	56.0	.	.	.	Fe:4.77	.	.	.	.	.	.	4.41	.	3.54	.	.	.	28.8
1	SRM 696	54.5	.	0.018	0.047	8.70	0.009	0.012	0.004	(0.007)	0.050	0.150	3.79	.	2.64	0.072	0.0014	0.14	29.9
1	IPT 131	54.1	.	.	.	11.5	0.022	.	0.31	.	0.15	.	0.78	.	1.77	0.042	0.013	0.35	30.0
1	GBAP-3	53.7	.	.	.	Fe:5.90	.	.	.	.	P:0.018	.	9.32	.	2.15	.	.	.	25.9
1	BCS 395	52.4	.	0.05	(0.07)	16.3	(0.02)	0.02	.	(0.02)	.	.	1.24	.	1.93	.	.	.	27.8
1	CETEM BXPA-1	52.8	49.0	.	.	12.8	.	.	(0.0017)	.	(0.018)	.	(4.93)	49.0	1.42	0.058	0.004	(0.066)	27.5
1	GBAP-4	51.2	.	.	.	Fe:9.92	.	.	.	.	.	.	4.36	.	3.34	.	.	.	26.4
1	SRM 69b	48.8	.	0.13	0.011	7.14	0.068	0.085	0.110	(0.025)	0.118	0.551	13.43	.	1.90	0.028	0.0035	0.29	27.2
1	SRM 698	48.2	.	0.62	0.080	19.6	0.010	0.058	0.38	.	0.37	0.143	0.69	.	2.38	0.064	0.029	0.061	27.3
1	SRM 697	45.8	.	0.71	0.100	20.0	0.062	0.18	0.41	.	0.97	0.0770	6.81	.	2.52	0.063	0.037	0.065	22.1
1	GBAP-2	41.9	.	.	.	Fe:12.53	.	.	.	.	P:0.015	.	17.81	.	1.65	.	.	.	20.2
1	SRM 600	40.0	.	0.22	0.024	17.0	0.23	0.05	0.013	0.022	0.039	0.155	20.3	.	1.31	0.060	0.003	0.060	20.5
1	GBAP-7	36.6	.	.	.	Fe:12.85	.	.	.	.	.	.	25.37	.	2.39	.	.	.	16.6

$A.Al_2O_3$: Available Alumina ** set JCRM R041, R303, R304 only $R.SiO_2$: Reactive Silica * Includes HfO_2

CRM BAUXITE

analysis listed in mass % DSZU 123.38, 123.39: available individually DSZU 123.40: SET/9 ONLY 50 g units

Number	Al_2O_3	C	CO_2	CaO	Cr_2O_3	FeO	Fe_2O_3	Ga_2O_3	MgO	MnO	P_2O_5	S	SiO_2	TiO_2	V_2O_5
DSZU 123.38-03	58.9	0.12	0.15	0.14	0.043	0.062	1.62	0.012	0.026	0.012	0.085	0.032	5.73	2.69	0.054
DSZU 123.39-03	45.0	0.20	0.19	0.16	0.35	0.26	23.2	0.0093	0.045	0.022	0.089	0.041	4.44	2.25	0.082
DSZU 123.40-03 1	53.0	.	.	.	0.021	.	13.9	.	.	.	.	.	2.86	1.29	.
DSZU 123.40-03 2	39.4	.	.	.	0.033	.	34.3	.	.	.	.	.	2.60	1.24	.
DSZU 123.40-03 3	59.6	.	.	.	0.014	.	2.91	.	.	.	.	.	4.25	0.81	.
DSZU 123.40-03 4	57.1	.	.	.	0.020	.	7.58	.	.	.	.	.	3.21	1.24	.
DSZU 123.40-03 5	47.9	.	.	.	0.28	.	21.2	.	.	.	.	.	2.20	2.16	.
DSZU 123.40-03 6	43.6	.	.	.	0.26	.	24.9	.	.	.	.	.	4.31	2.67	.
DSZU 123.40-03 7	52.4	.	.	.	0.25	.	15.4	.	.	.	.	.	1.70	2.04	.
DSZU 123.40-03 8	49.4	.	.	.	0.21	.	16.8	.	.	.	.	.	4.38	2.24	.
DSZU 123.40-03 9	59.2	.	.	.	0.05	.	1.46	.	.	.	.	.	5.46	3.51	.

RM BAUXITE

typical analysis listed in mass % 100 g units

Number	Al_2O_3	C tot	CO_2	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	Mn_3O_4	Na_2O	P_2O_5	S	SiO_2	TiO_2	W	ZrO_2	$-H_2O$	900'C
DH X0301	82.05	0.030	0.013	0.072	0.087	1.57	0.057	0.026	0.010	0.034	0.102	0.003	12.89	2.77	0.139	0.135	0.131	

CRM BERYLLIUM ORE

analysis listed in mass % NCS DC8613: 100 g all others: 70 g

Number	Be	BeO	Al_2O_3	CaO	F	FeO	$T.Fe_2O_3$	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
NCS DC86313	.	3.02	15.55	0.52	0.0088 (F-)	0.15	0.47	(0.63)	3.28	0.083	0.020	3.63	(0.018)	71.97	0.010	0.86
NCS DC86302	0.365	.	14.86	0.584	0.041	(0.18)	0.593	0.59	3.89	0.069	0.036	4.67	0.013	73.99	0.016	0.73
NCS DC86301	0.060	.	14.86	0.582	0.019	(0.18)	0.513	0.60	4.10	0.071	0.030	4.79	(0.012)	73.97	0.015	0.68

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Mo	Nd_2O_3	Pr_6O_{11}	RE_xO_y*	Sc_2O_3	Sm_2O_3	Tb_4O_7	Tm_2O_3	W	Y_2O_3	Yb_2O_3
NCS DC86313	13.1	3.62	1.95	0.11	2.83	0.67	6.08	0.25	3.37	5.96	1.58	63.6	1.91	1.99	0.57	0.29	.	23.0	1.88
NCS DC86302	14.8	4.6	2.2	0.15	3.8	0.87	7.7	0.36	1.2	7.6	2.0	78.6	3.1	2.7	0.80	0.36	5.5	28.9	2.5
NCS DC86301	14.3	4.5	2.1	0.14	3.6	0.82	7.0	0.31	0.41	6.6	1.7	75.6	1.7	2.5	0.80	0.32	1.3	29.2	2.2

* RE_xO_y: Rare Earth Oxide

BORATE ORE

= class, where 1 = CRM and 2 = RM * SRM 1835 also contains LOI + H_2O: 25.724

#	Number	Al_2O_3	B_2O_3	BaO	CaO	F	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SO_3	SiO_2	SrO	TiO_2	Units
1	SRM 1835 *	3.474	18.739	0.0497	21.622	0.348	1.141	1.261	3.411	0.0333	3.484	1.477	18.408	0.9418	0.1332	60 g
2	CERAM AN30	7.41	17.4	.	13.0	.	0.18	1.13	0.22	.	8.67	.	51.8	.	0.03	25 or 100 g

RM CALCINED BONE

Number	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	PbO	SiO_2	TiO_2	LOI	Units
CERAM CCB1	0.05	0.031	53.4	<0.01	0.04	0.011	1.14	0.52	40.5	<0.02	1.28	<0.01	2.60	25 or 100 g

CRM CARBONATITE

analysis listed in mass % T = Total SARM: 100 g units US: 30 g units

Number	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	Ba	Ce	La	Nb	Sr
SARM 40	0.41	49.77	2.75	(0.4)	(0.03)	1.97	0.18	(0.05)	2.05	3.08	0.05	(0.0310)	(0.0160)	.	(0.0010)	0.000016
US COQ-1	0.37	48.3	2.94 T	.	0.16	1.25	0.43	0.04	2.6	3.47	0.15	0.1000	0.1700	0.0750	0.3900	1.2000

analysis listed in mg/kg

Number	Be	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ho	Mo	Nd	Ni
SARM 40	.	(20)	(35)	.	(10)	.	.	.	(10)	.	.	(10)	.	(25)
US COQ-1	1.2	<5	<10	0.2	<10	18	7	15	6	50	3	.	480	13

Number	Pb	Pr	Rb	Sc	Sm	Tb	Th	U	V	Y	Yb	Zn	Zr
SARM 40	(20)	.	(10)	.	.	.	(12)	.	27	33	.	25	87
US COQ-1	.	150		3	56	4	10	11	110	81	6	87	65

CRM CHERT

analysis listed in mass % 20 g units

Number	Al_2O_3	CaO	CO_2	FeO	Fe_2O_3	T.Fe_2O_3	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
JCh-1	0.734	0.0449	(0.055)	0.0867	0.272	0.356	0.356	0.152	0.221	0.0754	0.0173	0.0305	0.0167	97.81	0.0316

continued analysis listed in mg/kgb

Number	As	Ba	Ce	Co	Cr	Cs	Cu	Eu	La	Lu	Nd	Ni	Pb
JCh-1	0.567	302	5.21	15.5	7.04	0.243	15.3	0.0594	1.52	0.0344	2.05	8.76	2.00

Number	Rb	Sc	Sm	Sr	Th	U	V	Y	Yb	Zn	Zr
JCh-1	8.61	0.979	0.359	4.20	0.735	0.736	10.4	1.81	0.182	7.93	11.5

CHROME MAGNESITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	MgO	Cr_2O_3	Al_2O_3	B_2O_3	CaO	Fe_2O_3	K_2O	Li_2O	MnO	Mn_3O_4	Na_2O	P_2O_5	SiO_2	TiO_2	Units
1	NH 8-4-02	76.2	5.56	2.21	.	2.45	8.72	.	.	.	.	.	.	2.93	.	75 g
1	BCS 396	64.6	15.6	5.73	0.09	1.12	10.9	(0.03)	(0.05)	0.17	.	(0.06)	.	1.37	0.26	100 g
1	NH 95	63.93	18.30	3.50	.	1.23	6.77	.	.	.	.	.	.	4.05	.	75 g
1	BCS 370	61.8	13.4	12.3	.	1.54	7.23	0.03	0.03	0.11	.	0.06	.	3.01	0.13	100 g
1	VS K5/2	54.8	22.6	4.28	.	1.15	8.47	.	.	.	.	.	.	8.64	.	125 g
1	BCS 369	53.5	17.2	14.7	.	1.17	10.3	0.03	0.03	0.11	.	0.05	.	2.59	0.14	100 g
1	NH 8-4-01	48.0	28.51	6.08	.	1.56	11.58	.	.	.	.	.	.	2.93	.	75 g
2	CERAM AN21A	47.7	29.7	5.94	.	1.20	11.6	0.02	0.02	.	0.18	0.07	.	3.97	0.12	25 g
1	NH 96	46.98	22.37	12.92	.	1.59	11.90	.	.	.	.	.	.	2.71	.	75 g
2	CERAM AN11	39.5	24.2	13.5	.	1.46	1.37	0.06	0.03	.	0.16	0.10	.	8.85	0.11	25 g
1	NH 97	21.26	40.00	16.12	.	0.52	14.73	.	.	.	.	.	.	5.94	.	75 g
1	GBW 07202	16.95	48.97	13.37	.	0.66	(3.86)	0.010	.	0.12	.	0.009	0.003	4.20	0.077	200 g
1	GBW 07201	15.66	49.44	12.20	.	0.36	(1.84)	0.11	.	0.28	.	0.025	0.003	4.08	0.12	200 g

CRM CHROMITE

Number	Origin	Cr	Fe	MgO	Ti	Units
IGS 30	Phillipines	23.95	11.21	(16.62)	0.14	55 g

CHROMIUM ORE

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Cr_2O_3	Al_2O_3	CaO	MgO	MnO	Mn_3O_4	Fe	FeO	Fe_2O_3	P	P_2O_5	S	SO_3	SiO_2	TiO_2	V
1	USZ 36-2002	54.37	8.24	0.24	16.09	0.15	.	.	.	14.73T	.	0.02	.	0.07	4.73	0.11	0.04
1	VS R27	50.1	7.08	1.04	18.7	.	.	9.66	8.2	.	0.0021	.	0.018	.	6.88	.	.
1	SARM 8	48.97	10.57	0.26	14.69	0.25	.	14.13	(13.9)	.	0.0039	.	0.0341	.	4.30	0.24	0.14
1	JSS 870-2	48.14	11.62	.	15.54	.	.	14.04	.	.	(0.002)	.	0.018	.	3.96	.	.
1	SARM 9	46.45	15.17	(0.16)	10.85	0.21	.	19.41	(17.15)	.	0.0024	.	0.0028	.	0.61	0.56	0.32
1	VS P14/3	42.8	6.43	0.126	23.7	.	.	8.59	9.4	.	0.0012	.	0.043	.	10.7	.	0.053
1	BCS 308	41.5	19.4	0.34	16.4	(0.14)	.	.	15.3	.	.	.	.	.	4.25	(0.16)	.
2	CERAM 2CAS5	35.8	23.2	0.57	16.8	.	0.13	.	.	16.4	.	.	.	.	.	0.29	.
2	CERAM AN22	34.0	29.3	0.39	16.5	.	0.14	.	.	15.4	.	.	.	.	.	0.26	.

continued

Number	Au*	C	CO_2	Co	H_2O-	K_2O	Li_2O	Na_2O	Ni	Zn	LOI	Units
USZ 36-2002	0.03	.	0.47	0.01	0.11	.	.	.	0.09	0.023	1.07	100 g
VS R27	.	.	.	.	.	.	.	.	.	.	.	125 g
SARM 8	.	.	.	.	.	.	.	.	.	.	.	100 g
JSS 870-2	.	.	.	.	.	.	.	.	.	.	.	100 g
SARM 9	.	.	.	.	.	.	.	.	.	.	.	100 g
VS P14/3	.	(0.3)	.	.	.	.	.	.	.	.	.	100 g
BCS 308	.	.	.	.	.	.	.	.	.	.	.	100 g
CERAM 2CAS5	.	.	.	.	.	0.06	<0.01	0.03	.	.	.	25 or 100 g
CERAM AN22	.	.	.	.	.	0.03	0.02	0.08	.	.	0.76	25 or 100 g

CRM GIANT CLAM

analysis listed in mass % * Provisional Analysis 100 g units

Number	CaO	Ba	Fe	K	Mg	Mn	Na	Sr	H2O-	H2O+	Tot. S	SiO2	LOI
JCt-1 *	54.66	0.00061	0.0016	0.0089	0.0295	0.000038	0.4440	0.1410	(0.22)	(1.04)	(0.0192)	(0.14)	(44.61)

* JCt-1 also has informational data for Ag, Al, Au, B, Cd, Cl, Co, Cs, Cu, Hg, Li, Mo, Pb, Rb, Sn, Tl, U, V, W, and Zn

CRM CLAY

analysis listed in mass %

Number	Al	Al_2O_3	B	Ba	Ca	CaO	Ce	CO_2	Co	Cr	Cu	Fe	FeO	Fe_2O_3	K	K_2O	La	LOI
SRM 97b	20.76	.	.	(0.018)	0.0249	.	.	.	(0.00038)	0.0227	.	0.831	.	.	0.513	.	.	(13.3)
SRM 1834	20.71	.	(1.1)	0.062	0.095	.	.	.	.	(0.02)	.	0.32	.	.	0.42	.	.	.
SRM 98b	14.30	.	.	(0.07)	0.0759	.	.	.	(0.00163)	0.0119	.	1.18	.	.	2.81	.	.	(7.5)
SRM 679	11.01	.	.	0.0432	0.1628	.	(0.0105)	.	(0.0026)	0.01097	.	9.05	.	.	2.433	.	.	.
VS 5372-90	.	15.97	0.007	0.11	.	3.03	0.010	1.00	0.016	0.009	0.032	.	0.20	9.23	.	2.79	0.008	9.3

continued analysis listed in mass %

Number	Mg	MgO	Mn	MnO	Na	Na_2O	Ni	P	P_2O_5	S	Si	SiO_2	Sr	Ti	TiO_2	V	Y	Zn	Zr
SRM 97b	0.113	.	0.0047	.	0.0492	.	.	(0.02)	.	.	19.81	.	0.0084	1.43	.	.	.	(0.0087)	(0.05)
SRM 1834	0.088	.	.	.	(0.14)	.	.	0.152	.	.	20.19	.	0.153	1.11	.	.	.	.	(0.047)
SRM 98b	0.358	.	0.0116	.	0.1496	.	.	(0.03)	.	.	26.65	.	0.0189	0.809	.	.	.	(0.0110)	(0.022)
SRM 679	0.7552	.	(0.1730)	.	0.1304	.	.	(0.075)	.	.	24.34	.	0.00734	0.577	.	.	.	(0.0150)	.
VS 5372-90	.	3.17	.	1.77	.	3.50	0.037	.	0.72	0.15	.	48.80	0.029	.	0.98	0.015	0.015	0.016	0.019

continued analysis listed in mg/kg except % which is mass %

Number	As	Au	Be	Cs	Eu	Hf	Ga	Li%	Mo	Nb	Pb	Rb	Sb	Sc	Sm	Sn	Th	U	Yb	Units
SRM 97b	.	.	.	(3.4)	(0.84)	(13)	.	0.0550	.	.	.	(33)	(2.2)	(22)	.	.	(36)	.	.	60 g powder
SRM 1834	.	.	.	.	.	.	.	(4.6)	.	.	.	.	.	.	.	.	.	.	.	30 mm Ø x 3 mm disc
SRM 98b	.	.	.	(16.5)	(1.3)	(7.2)	.	0.0215	.	.	.	(180)	(1.6)	(22)	.	.	(21)	.	.	60 g powder
SRM 679	.	.	.	(9.6)	(1.9)	(4.6)	.	0.00717	.	.	.	(190)	.	(22.5)	.	.	(14)	.	.	75 g powder
VS 5372-90	32	0.005	2.1	5	.	.	14	0.006	38	12	62	90	.	32	20	4.0	14	2.5	15	50 g powder

CLAYS and FIRECLAYS

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	SiO_2	Al_2O_3	CO_2	CaO	Cl-	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	LOI	Units
1	NH 139	82.41	13.80	.	0.14	.	0.84	0.51	0.12	.	0.059	.	.	0.53	.	75 g
1	NH 138	68.90	26.01	.	0.23	.	1.47	0.98	0.22	.	0.10	.	.	0.92	.	75 g
1	GBW 03103	66.64	13.28	1.66	3.23	0.011	4.64	2.50	1.84	0.088	1.81	0.106	0.027	.	5.10	60 g
1	NCS DC62108b	65.00	15.48	.	1.47	.	6.16	2.40	1.60	.	1.10	.	0.06	0.77	5.55	20 g
1	VS K11	62.2	16.8	.	1.2	.	(6.3)	.	2.01	0.064	.	.	S:0.05	0.98	.	50 g
1	NH 137	61.46	32.43	.	0.28	.	1.63	1.31	0.28	.	0.126	.	.	1.13	.	75 g
1	GBW 03115	55.90	28.57	.	0.70	.	0.87	1.54	0.30	.	1.74	.	.	1.21	8.72	50 g
2	CERAM AN41	54.8	41.5	.	0.16	.	0.71	1.81	0.41	.	<0.05	.	.	0.05	(12.4)	25 or 100 g
1	GBW 03102a	53.67	31.32	(0.051)	1.80	0.0029	0.33	1.15	0.083	0.020	2.55	0.053	0.023	0.030	8.81	50 g
2	CERAM 2CAS1 *	52.5	32.0	.	0.20	.	1.03	2.25	0.28	.	0.34	.	.	1.16	9.80	25 or 100 g
1	IPT 42	51.9	32.2	.	0.05	.	1.09	0.47	0.19	.	0.02	0.07	.	0.96	12.9	50 g
1	IPT 32	51.8	28.5	.	0.17	.	3.46	0.80	0.39	.	0.16	0.13	.	1.49	12.6	50 g
1	BCS 348	51.13	31.59	.	0.173	.	1.04	2.23	0.305	.	0.344	0.071	.	1.08	11.75	100 g
1	GBW 03101a	49.98	26.27	(0.041)	0.13	0.0041	10.55	0.79	0.46	0.052	0.060	0.14	0.49	0.70	10.62	50 g
1	IPT 28	45.1	37.6	.	0.09	.	0.83	0.03	0.04	.	0.02	0.15	.	2.04	13.9	50 g
1	CMSI 1780	44.48	38.56	.	0.074	.	0.66	.	0.074	.	.	.	.	1.73	14.05	60 g

* CERAM CAS1 also contains Li_2O: 0.03, and LOI is calculated at 110'C.

CRM COPPER ORE

analysis listed in mass % * Provisional Analysis T = Total CETEM: 140 g GBW 07233: 50 g others: 100 g

Number	Cu	Al_2O_3	CaO	F	Fe_2O_3	K_2O	MgO	MnO	Mo	Na_2O	P_2O_5	S	SiO_2	TiO_2	Zn	LOI
USZ 6-88	32.0	.	.	FeO:19.8	.	.	.	.	0.14	.	.	33.94	.	.	0.15	.
JCu-1 *	3.73	0.29	23.5	.	17.5T	0.015	2.13	0.59	.	0.052	.	(7.00T)	(28.68)	0.013	0.0679	(15.37)
GBW 07233	1.15	1.73	9.61	0.079	55.58	0.071	3.91	0.60	0.00014	0.044	.	0.72	9.27	0.079	0.059	.
CETEM CBPA-1	0.98	10.1	2.97	(0.0708)	16.5	1.85	3.29	Mn:0.058	(0.0010)	1.42	1.00	(0.16)	(56.4)	.	0.0126	(3.8)
USZ 3-85	0.817	16.35	0.29	.	3.95	3.68	0.71	0.020	0.017	1.59	.	2.09T	67.02	0.47	0.0097	4.13
GBW 07234	0.19	15.18	4.95	0.080	12.25	2.71	1.30	0.12	0.00024	3.21	.	0.14	53.26	0.50	0.013	.

continued analysis listed in mg/kg except where noted S.Cu = soluble copper

Number	Ag	As	Au	Bi	Ba	Cd	Ce	Co	Cr	Cs	S.Cu	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La
USZ 6-88	66	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
JCu-1 *	.	(173)	.	.	.	(3.6)	.	(324)	(10)	.	.	.	.	.	.	.	.	.	.	.
GBW 07233	3.9	4.2	.	1.5	.	0.42	13.2	.	(7)	.	.	1.1	0.28	0.78	22.6	1.1	0.89	0.26	1.4	7.5
CETEM CBPA-1	.	(9)	(0.17)	.	(478)	(3.0)	(427)	78	26	.	(0.5)	.	.	.	(22.2)	.	.	.	.	(267)
USZ 3-85	2.5	189	.	.	893	.	45	13	21	2.3	.	.	.	.	.	.	.	.	.	.
GBW 07234	0.70	1.5	.	0.43	.	0.14	72.6	.	(10)	(10)	.	2.4	1.3	1.3	22.6	3.6	0.93	0.48	0.25	40.3

Number	Lu	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se	Sm	Sn	Sr	Tb	Te	Th	Tl	Tm	W	Y	Yb
USZ 6-88	.	.	.	0.014%	.	.	.	.	77	.	.	.	.	8	.	.	.	.	.	.
JCu-1 *	.	.	(425)	(4)	.	.	(3.8)	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07233	0.16	4.7	9.6	9.1	1.4	.	0.36	1.8	5.1	1.0	11.1	.	0.21	0.62	0.90	0.06	0.11	4.1	7.3	0.28
CETEM CBPA-1	.	(143)	276	(33)	.	.	.	(16)	.	(20)	(7.0)	.	.	.	(25)	.	.	.	(69)	.
USZ 3-85	.	.	.	.	.	81	24	.	.	.	.	172	.	.	.	.	.	.	.	.
GBW 07234	0.20	29.4	5.6	13.0	8.1	.	0.23	5.4	0.89	5.1	3.8	.	0.48	0.13	8.8	0.36	0.18	3.9	11.8	1.2

COPPER ORE

= class, where 1 = CRM and 2 = RM analysis in mass % except * which is mg/kg CAN, IMN: 200 g GBM: 250 g SRM: 40 g USZ: 100 g

#	Number	Cu	Ag*	Ni	Pb	Tot.S	Zn	As	Ba*	Co*	Cr*	Fe	Fe_2O_3T	Hg*	Mn	Mo	Sr
1	GBM901-7	44.2368	61.9	0.0292	0.4859	.	0.0350	0.0626	.	823	.	.	.	.	.	.	.
1	GBM904-14	44.0416	.	0.0314	0.4936	.	0.0365	.	.	.	.	.	.	.	.	.	.
1	GBM901-6	21.4816	43.7	0.0091	0.3269	.	0.0148	0.0248	.	328	.	.	.	.	.	.	.
1	GBM903-16	21.3328	.	0.0097	0.3359	.	0.0197	.	.	.	.	.	.	.	.	.	.
1	GBM908-11	17.7033	11.4	.	0.0547	29.78	2.3604	.	.	.	.	.	.	.	.	.	.
1	GBM905-14	17.3667	.	0.0531	0.0334	.	0.0074	.	.	.	.	.	.	.	.	.	.
1	GBM906-16	10.6807	19.2	.	0.0239	.	0.4783	.	.	203	.	.	.	.	.	.	.
1	GBM301-8	10.4030	23.3	0.0057	0.1631	.	0.0093	0.0128	.	164	.	.	.	.	.	.	.
1	GBM304-11	10.4011	.	0.0065	0.1648	.	0.0109	.	.	.	.	.	.	.	.	.	.
1	GBM908-16	7.0180	22.5	.	0.0735	7.54	.	.	.	.	.	.	.	.	.	.	.
1	GBM908-15	5.0027	13.7	.	0.4961	5.04	.	.	.	.	.	.	.	.	.	.	.
1	GBM308-14	3.7188	40.2	0.0050	0.6514	32.60	1.9025	.	.	.	.	.	.	.	.	.	.
1	GBM905-11	3.1758	.	0.0038	0.0042	.	0.0084	.	.	.	.	.	.	.	.	.	.
1	GBM304-16	2.2721	.	0.0016	0.0728	.	0.0718	.	.	.	.	.	.	.	.	.	.
1	GBM906-13	2.1862	3.7	.	0.0108	.	0.3036	.	.	59	.	.	.	.	.	.	.
1	GBM905-12	2.1853	.	0.0062	0.0033	.	0.0100	.	.	.	.	.	.	.	.	.	.
2	IMN MR3	1.87	44	.	0.16	.	0.047	0.0057	.	.	.	1.10	.	.	.	.	.
2	IMN MR2	1.61	29	.	0.085	.	0.025	0.013	.	.	.	0.88	.	.	.	.	.
1	GBM306-16	1.3409	.	0.0157	0.0044	.	0.0053	.	.	.	.	.	.	.	.	.	.
2	IMN MR1	1.23	58	.	0.15	.	0.040	0.028	.	.	.	1.41	.	.	.	.	.
1	GBM307-15	1.0921	.	0.0041	0.0242	1.01	0.1718	.	.	.	.	.	.	.	.	.	.
1	CAN HV-2	0.57	.	.	.	.	.	.	.	.	.	.	.	.	.	0.048	.
1	USZ 4-85	0.115	.	.	.	2.03	.	.	.	.	.	.	3.9	.	.	0.007	.
1	SRM 331a	0.0789	.	.	(0.0006)	.	0.00718	.	259	12.6	13.9	(4.207)	.	0.00184	0.0497	(0.00032)	0.02528

CRM DIABASE

analysis listed in mass % US: 30 g VS: 40 g

Number	SiO_2	Al_2O_3	Ba	CO_2	CaO	F	FeO	Fe_2O_3	Fe_2O_3T	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	Sr	TiO_2
VS 2115-81	57.98	13.95	0.069	0.24	6.35	0.046	8.50	.	11.57	0.11	2.04	3.18	0.142	3.01	0.194	0.086	0.033	1.24
US W-2a	52.68	15.45	0.0170	.	10.86	(0.0205)	8.34	1.53	10.83	.	0.626	6.37	0.167	2.20	0.14	(0.0079T)	0.0190	1.06

analysis listed in mg/kg except % which is mass % US W-2: informational trace As, B, Be, Cl, Cs, Er, Eu, Ho, Lu, Sb, Ta, Tb, Tm, and U

Number	Ce	Co	Cr	Cu	Dy	Hf	Ga	Ge	La	Li	Mo	Nb	Nd	Ni	Pb	Rb	Sc	Sm	Sn	Th	V%	Y	Yb	Zn	Zr%
VS 2115-81	.	34	21	59	.	.	23	1.7	.	6.6	2.7	8.4	.	20	22	.	33	.	5.9	.	0.020	27	2.8	104	0.018
US W-2a	23	43	92	110	3.6	2.6	17	.	10	9.6	.	(7.9)	13	70	(9.3)	21	36	3.3	.	2.4	0.0260	23	2.1	80	0.0100

CRM DIATOMACEOUS EARTH

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2
UNS KB	14.47	0.158	1.68	0.67	0.251	0.074	0.09	74.21	0.557

CRM DIORITE

analysis listed in mass % T = Total 100 g units

Number	Al_2O_3	CaO	CO_2	Fe	FeO	Fe_2O_3	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Type
CAN SY-4	20.69	8.05	3.5	4.2	2.86	6.21	(1.0)	(0.15)	1.66	0.54	0.108	7.10	0.131	49.9	0.287	4.56	Diorite Gneiss
USZ 50-2009	15.97	6.99	.	.	4.82	8.10T	0.35	(0.11)	1.55	3.81	0.12	3.33	(0.39)	57.75	1.34	0.51	Diorite

continued analysis listed in mg/kg

Number	Ba	Be	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Li	Lu	Mn	Nb
CAN SY-4	340	2.6	122	2.8	12	1.5	7	18.2	14.2	2.00	35	14.0	10.6	4.3	58	37	2.1	819	13
USZ 50-2009	425	.	50.8	84.9	100	(5.24)	100	(4.29)	(2.29)	(1.41)	19.58	(5.21)	(3.69)	(0.85)	24.40	(13.9)	(0.30)	.	6.92

Number	Nd	Ni	Pb	Pr	Rb	Sc	Sm	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr
CAN SY-4	57	9	10	15.0	55	1.1	12.7	1191	0.9	2.6	1.4	2.3	0.8	8	.	119	14.8	93	517
USZ 50-2009	30.48	40.94	8.97	(6.45)	48.5	20.46	(5.61)	454	(0.48)	(0.76)	3.88	(0.32)	(1.09)	213	266	23.62	2.05	92.77	191

CRM DOLERITE

analysis listed in mass % except * which is mg/kg SARM: 100 g US: 30 g

Number	SiO_2	Al_2O_3	Ba*	CaO	Co*	Cr*	Cu*	FeO	Fe_2O_3	Fe_2O_3T	K_2O	MgO	MnO	Na_2O	P_2O_5	Sr*	TiO_2	V*	Y*	Zn*	Zr*
SARM 50	51.56	15.28	220	10.80	40	357	84	8.49	11.0	.	0.61	7.57	0.17	2.30	0.15	195	0.86	216	23	81	86
US DNC-1a	47.15	18.34	118	11.49	57	270	100	7.32	1.79	9.97	0.234	10.13	0.15	1.89	0.07	144	0.48	148	18	70	38

continued analysis listed in mg/kg

Number	As	B	Be	Ce	Cl	Dy	Eu	F	Ga	Gd	Ho	La	Li	Nb	Nd	Ni	Pb	Rb	Sb	Sc	Th	Yb
SARM 50	.	.	.	(30)	.	.	.	.	.	.	.	.	.	(10)	.	(85)	25	14	.	.	(6)	.
US DNC-1a	(0.12)	(0.9)	(1)	.	(60)	(3)	0.59	(66)	(15)	(2)	(0.62)	3.6	5.2	(3)	5.2	247	(6.3)	(4.5)	0.96	31	.	2

CRM DOLOMITE

analysis listed in mass %

Number	CaO	MgO	Al_2O_3	CO_2	Cl	F	FeO	Fe_2O_3	H_2O	K_2O	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Units
UL DWA1	30.84	21.40	(0.05)	.	.	.	.	0.27	.	0.010	(0.06)	0.042	(0.023)	(0.06)	(0.010)	47.29	20 g
GBW 07114	30.02	21.8	0.10	46.77	0.012	0.014	0.15	0.04	0.34	0.038	0.010	0.030	0.006	0.62	0.015	.	100 g

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Br	C%	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
UL DWA1	.	(1.3)	.	24	.	.	.	.	.	2.2	(0.2)	(4)	.	(4)	0.82	0.50	0.16	.	0.81
GBW 07114	0.04	0.23	20.5	44.3	(0.22)	0.03	0.84	(12.88)	0.07	3.58	3.88	2.6	0.07	30.2	0.19	0.09	0.05	(0.21)	0.18

Number	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	S%	Sb
UL DWA1	.	(0.03)	.	0.18	.	.	3.6	.	0.05	.	.	3	.	(35)	0.67	.	.	.
GBW 07114	0.15	(0.10)	(0.004)	0.04	0.23	(0.066)	1.34	2.30	0.019	(0.24)	(2.77)	1.39	241	(4.44)	(0.44)	(1.42)	0.011	(0.04)

Number	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
UL DWA1	0.24	.	0.62	.	284	.	0.12	.	0.08	.	0.06	1.4	6.9	.	9.4	0.39	83	.
GBW 07114	0.098	0.08	0.25	0.53	49	(0.18)	0.05	(0.012)	0.11	(0.070)	(0.040)	0.16	2.10	0.11	(1.40)	0.09	11.7	3.0

DOLOMITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	CaO	MgO	SiO_2	Al_2O_3	CO_2	Cr_2O_3	Fe_2O_3	K_2O	MnO	Na_2O	P	P_2O_5	PbO
2	DH 0911	41.98	10.31	2.11	0.471	43.78	.	0.462	0.194	0.032	0.025	.	0.037	.
1	NCS DC14020a	37.59	15.38	0.25	0.11	.	.	.	0.019	0.020	0.015	0.0012	.	.
2	DH 0909	34.94	12.99	6.71	1.55	41.05	.	0.92	0.589	0.037	0.043	.	0.065	.
1	BCS 512	30.61	21.59	0.379	0.055	.	(<0.001)	0.030	(<0.02)	0.0036	.	.	(<0.02)	(<0.001)
1	ECRM 782-1	30.34	21.29	0.266	0.104	.	0.0009	0.450	0.0260	0.081	.	.	0.0128	0.0029
2	DH 0907	28.67	20.06	3.91	0.846	44.08	.	0.84	0.349	0.046	0.045	.	0.067	.

Number	S	SO_3	SrO	TiO_2	ZnO	$-H_2O$ 900'C	LOI	Units
DH 0911	.	0.064	.	0.036	.	0.411	.	100 g
NCS DC14020a	0.046	.	.	.	.	.	.	70 g
DH 0909	.	0.180	.	0.110	.	0.724	41.59	100 g
BCS 512	.	.	0.024	0.0020	(<0.01)	.	46.80	100 g
ECRM 782-1	.	.	.	0.0042	0.0082	.	47.25	100 g
DH 0907	.	0.105	.	0.065	.	0.614	44.68	100 g

RM DOLOMITE SUBSTITUTE

typical analysis 100 g units

Number	CaO	MgO	Al_2O_3	Cr_2O_3	Fe_2O_3	K_2O	Mn_3O_4	NiO	P_2O_5	S	SO_3	SiO_2	SrO	TiO_2	V_2O_5	ZnO
DH 0705	37.18	31.76	6.38	0.215	12.47	0.086	1.61	.	0.563	.	0.583	8.14	.	0.332	0.135	.
DH 0706	29.64	35.61	4.044	.	21.97	0.068	0.995	.	0.265	.	0.48	6.15	.	0.192	.	.
DH 0708	28.36	45.22	13.45	0.082	3.12	0.171	0.527	0.009	0.123	0.171	.	7.93	0.016	0.255	0.024	0.021
DH 0707	16.07	39.06	17.12	0.207	12.25	0.157	0.858	0.021	0.199	0.151	.	13.51	.	0.423	.	.

DUNITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	MgO	SiO_2	Si	Al_2O_3	Al	CO_2	Tot.C	CaO	Ca	Co	Cr	Cr_2O_3	T.Fe	FeO	Fe_2O_3	T.Fe_2O_3
1	US DTS-2B	49.4	39.4	18.4	0.45	0.24	.	.	0.12	0.09	0.0120	1.5500	.	5.43	(4.27 FeII)	.	7.76
1	SARM 6	43.51	38.96	.	(0.3)	.	.	.	0.28	.	.	.	10.42	.	14.63	0.71	.
1	VS 2112-81	42.40	35.07	.	.	.	0.46	.	.	.	0.0129	.	.	.	.	.	10.06
1	VS 4233-88	41.86	39.58	.	0.97	.	(1.61)	.	1.52	.	6.31	0.41	.	.	(5.54)	8.91	.
2	DH 1002	23.79	41.87	.	8.87	.	0.767	0.332	4.36	.	.	.	0.037	5.40	0.623	.	.

continued analysis listed in mass %

Number	H_2O	K_2O	Mg	MnO	Mn_3O_4	Na	Na_2O	Ni	NiO	P_2O_5	S	TiO_2	V	LOI @ 900 ‘C	Units
US DTS-2B	.	.	29.8	.	.	(0.02)	.	0.3780	.	.	.	.	0.0022	.	30 g
SARM 6	.	(0.01)	.	0.22	.	.	(0.04)	.	.	.	.	(0.02)	.	.	100 g
VS 2112-81	11.35	.	.	0.176	.	.	.	0.133	.	.	.	.	0.00069	.	40 g
VS 4233-88	(0.4 -)	0.010	.	0.13	.	.	0.035	0.22	.	(0.01)	(0.041)	0.018	0.0033	.	100 g
DH 1002	.	4.80	.	.	0.061	.	0.068	.	0.022	0.922	.	0.929	.	5.95	100 g

continued analysis listed in mg/kg except % which is mass %

Number	Ba	Cu	Ge	Li	Mn	Mo	Pb	Rb	Sb	Sc	Sn	Sr	Zn
US DTS-2B	(16)	(3)	(0.7)	.	830	.	(4)	(2)	(0.6)	(3)	.	.	45
SARM 6	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 2112-81	.	27	.	.	.	1.4	.	.	.	.	2.2	.	82
VS 4233-88	.	33	1.1	2.0	.	.	.	.	.	9	.	18	30
DH 1002	.	.	.	.	.	.	.	.	.	.	.	.	.

FELDSPAR

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	Type	SiO_2	Al_2O_3	BaO	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	PbO	Rb_2O	TiO_2	LOI	Units
1	BCS 376/1	Potash	65.77	18.63	0.0210	0.421	0.085	11.59	(0.03)	3.00	(0.02)	0.0090	.	(<0.01)	0.203	100 g
2	CERAM CAS8	Potash	67.15	18.63	.	0.22	0.11	10.6	0.02	3.53	.	.	.	0.03	(0.30)	25 or 100 g
1	SRM 70a	Potash	67.12	17.9	0.02	0.11	0.075	11.8	.	2.55	.	.	0.06	0.01	0.40	40 g
1	GBW 03116	Potash	66.26	18.63	.	0.76	0.19	9.60	0.054	3.69	.	.	.	0.048	0.86	50 g
1	IPT 53	Potash	65.8	18.3	.	0.27	0.13	12.1	0.05	2.5	0.072	.	.	0.013	0.51	80 g
1	BCS 375/1	Soda	69.24	17.88	.	0.78	0.291	1.47	0.180	8.89	0.226	.	.	0.312	0.72	100 g
1	IPT 72	Soda	66.2	20.26	.	0.18	0.09	1.47	(0.022)	10.0	1.03	.	.	0.005	0.66	80 g

CRM FELDSPAR

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	Li_2O	MgO	MnO	Na_2O	P_2O_5	Rb_2O	TiO_2	LOI	Units
GUW FK	88.2	6.18	.	0.110	.	0.261	.	.	4.23	.	0.15	0.0037	0.25	0.077	.	0.058	.	50 g
UNS ZK	74.38	14.19	.	0.43	0.73	0.88	.	.	4.06	0.06	0.067	0.025	4.50	.	0.094	0.039	0.54	100 g
JF-1	66.69	18.08	.	0.93	.	0.06	0.08	+0.23 -0.13	9.99	.	0.006	0.001	3.37	0.01	.	0.005	.	100 g
JF-2	65.30	18.52	.	0.09	.	0.06	0.06	+0.24 -0.18	12.94	.	.	0.001	2.39	.	.	0.005	.	100 g
VS 811-89	60.67	18.20	0.20	0.51	4.8	7.20	.	4.0	3.43	.	2.22	0.042	2.31	0.19	.	0.94	.	100 g

analysis listed in mg/kg except % indicating mass %, * indicating ppb, and ! indicating scientific notation

Number	Al%	As	B%	Ba%	Be	Ca%	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F%	Fe%	Ga	Ge
GUW FK	.	.	.	0.0700	.	.	.	.	.	2.6	11	.	.	.	.	.	6	.
UNS ZK	.	4.8	.	.	.	.	5.7	7.0	.	38.7	12.2	.	.	.	.	.	33.3	.
JF-1	9.57	.	.	0.1750	.	0.66	4.19	0.12	5.48	2.09	0.82	0.39	0.31	0.87	.	0.06	17.4	.
JF-2	9.80	.	.	0.0298	.	0.06	0.84	0.68	.	1.06	0.78	.	.	0.59	.	0.04	17.9	.
VS 811-89	.	.	0.008	0.09	3.0	.	0.007*	21	96	6.3	41	.	.	.	0.06	.	22	1.7

Number	Hf	Ho	K%	La	Li%	Mg%	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Ra!	Rb%	S%
GUW FK	.	.	.	.	0.0008	.	.	.	.	.	.	.	0.004	18	.	.	0.0132	.
UNS ZK	1.4	.	.	.	.	.	.	21.0	.	33.5	.	29.4	.	.	.	.	.	
JF-1	1.18	0.11	8.29	2.80	0.000981	0.004	0.001	.	2.50	0.74	1.46	.	.	33.4	0.48	.	0.0266	.
JF-2	0.19	.	10.74	0.63	0.000219	.	0.001	.	1.77	0.70	.	.	.	48.7	.	.	0.0218	.
VS 811-89	.	.	.	.	0.006	.	.	2.0	.	14	.	59	.	20	.	3e-10	0.012	0.087

Number	Sc	Si%	Sm	Sr%	Ta	Tb	Th	Ti%	Tl	U	V	Y	Yb	Zn%	Zr%
GUW FK	.	.	.	0.0072	.	.	.	.	.	.	.	.	.	0.0014	.
UNS ZK	3.6	.	16.8	.	19.4	.	4.7	.	.	.	.	8.4	.	0.00194	.
VS 811-89	19	.	3.2	0.017	1.3	.	11	.	.	2.5	0.016%	32	3.4	0.012	0.021
JF-1	0.23	31.17	0.41	0.0172	0.079	0.076	1.17	0.003	1.18	0.33	5.43	2.84	0.35	0.000441	0.00386
JF-2	0.089	30.52	0.11	0.0200	.	.	0.31	0.003	1.10	.	4.86	2.67	.	0.000140	0.000673

CRM FLUORSPAR (FLUORITE)

analysis listed in mass % NCS DC62003: 20 g other NCS, CMSI, GBW: 65 g RH03: 50 g SRM: 120 g all others: 100 g units

Number	CaF_2	F	Al_2O_3	BaO	$CaCO_3$	CaO	Fe	Fe_2O_3	K_2O	Na_2O	P	S	SiO_2	Others
SRM 180	98.80	.	.	.	.	.	.	.	.	.	.	.	.	
NCS DC14026a	98.55	.	.	.	0.44	.	0.044	.	0.024	0.005	0.0075	0.011	0.70	
SARM 15	97.84	.	.	.	0.95	.	.	(0.23)	.	.	0.007	.	(0.26)	$MgCO_3$: 0.55, Mn: 0.0213
SRM 79a	97.39	.	.	.	.	.	.	.	.	.	.	.	.	
SARM 14	97.32	.	.	.	(0.3)	.	.	(0.06)	.	.	(0.079)	.	(0.57)	
BCS 392	97.2	.	.	0.37	.	0.52	.	.	.	.	.	0.12	0.67	CO_2: 0.48, Pb: 0.18
JK D	97.07	47.24	0.04	.	.	.	.	0.20	.	.	0.035	0.004	(1.5)	
VS 1823-80	95.83	.	.	.	0.20	.	.	.	.	.	0.024	.	2.92	
USZ HJ-95	95.33	.	.	.	.	.	.	.	.	.	.	.	.	
GBW 07250	94.91	.	.	.	(0.02)	.	.	0.096	0.019	0.005	0.0025	0.029	4.72	
VS 1822-80	93.86	.	.	.	0.41	.	.	.	.	.	0.057	0.410	3.16	
NCS DC14022a	93.68	.	.	.	0.30	.	0.166	.	0.026	0.006	0.014	0.35	3.06	
NCS DC14024a	93.28	.	.	.	0.62	.	0.22	.	0.040	0.006	0.0014	0.009	5.44	
GBW 07252	92.57	.	.	.	(0.02)	.	.	0.124	0.029	0.006	0.0024	0.043	6.84	
VS 3383-86	91.84	.	0.53	.	.	.	0.612	.	.	.	0.063	0.095	5.03	
GBW 07251	90.87	.	.	.	(0.02)	.	.	0.124	0.026	0.005	0.0031	0.090	8.35	
USZ HJ-85	85.62	.	.	.	2.43	.	.	.	.	.	.	.	.	
IPT 95	85.4	.	.	.	.	.	.	0.36	.	.	.	.	8.3	
GBW 07253	85.21	.	.	.	(0.02)	.	.	0.209	0.044	0.005	0.0013	0.045	14.15	
VS SH13	84.7	.	.	.	0.51	.	0.353	.	.	.	0.012	0.103	13.0	
RH03	84.6	.	.	.	.	.	0.35	.	.	.	0.0110	0.101	13.1	
NCS DC14025a	81.55	.	.	.	0.07	.	0.28	.	0.059	0.008	0.015	0.50	14.04	
JK C	76.91	37.43	0.66	8.2	.	.	.	0.70	.	.	0.026	1.75	8.2	Pb: 0.07
NCS DC14048	76.79	.	.	.	0.34	.	0.4	.	0.081	0.007	0.0021	0.11	21.10	
USZ HJ-75	75.85	.	.	.	1.87	.	.	.	.	.	.	.	.	
NCS DC62003	67.22	.	2.50	.	.	0.50	.	0.63	1.21	0.32	.	.	23.52	MgO: 0.03, LOI: 0.62
NCS DC14047	65.80	.	.	.	0.060	.	0.49	.	0.093	0.009	0.0027	0.26	31.04	
USZ HJ-65	65.40	.	.	.	.	.	.	.	.	.	.	.	.	
NCS DC14046	59.99	.	.	.	0.07	.	0.63	.	0.14	0.014	0.0045	0.28	36.14	
USZ HJ-55	56.09	.	.	.	1.65	.	.	.	.	.	.	.	.	
USZ HJ-40	41.01	.	.	.	4.14	.	.	.	.	.	.	.	.	
VS 2665-83	38.00	.	.	.	6.80	.	.	.	.	.	0.036	0.32	25.57	
VS 4182-87	32.75	.	.	.	1.70	.	.	.	.	.	0.114	0.038	47.52	
VS 5132-89	32.69	.	.	.	11.75	.	.	.	.	.	.	.	(27.68)	
VS 2666-83	32.02	.	.	.	0.70	.	.	.	.	.	0.055	1.24	47.73	
USZ HJ-20	20.06	.	.	.	3.29	.	.	.	.	.	.	.	.	
USZ HJ-10	11.03	.	.	.	3.00	.	.	.	.	.	.	.	.	
USZ HJ-5	4.93	.	.	.	14.88	.	.	.	.	.	.	.	62.26	
VS 5133-89	4.17	.	.	.	1.10	.	.	.	.	.	.	.	.	

Number CaF_2 F Al_2O_3 BaO $CaCO_3$ CaO Fe Fe_2O_3 K_2O Na_2O P S SiO_2 Others

FLUORSPAR (FLUORITE)

= class where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg IGS: 55 g all others: 100 g

#	Number	Ca	**F**	Al_2O_3	BaO	CO_2	CuO	Fe_2O_3	K_2O	MgO	Mn	MnO	Na_2O	SiO_2	SO_4	TiO_2	LOI 900'C
1	IGS 39	.	**46.69**	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	DH 2707	46.76	**41.79**	0.371	<0.006	2.91	.	0.257	0.042	0.070	.	0.008	0.061	6.16	0.042	.	0.363
2	DH 2712	44.18	**40.6**	1.01	.	2.11	0.199	0.373	0.125	0.739	.	0.237	.	8.91	0.103	0.069	0.370
2	DH 2709	39.98	**38.10**	0.310	.	0.027	0.052	15.72	0.029	0.017	.	0.077	0.030	3.93	0.027	.	0.929
2	DH 2714	40.17	**37.47**	0.209	1.01	1.13	0.071	1.78	0.083	0.138	.	0.100	0.083	16.85	1.25	.	.
2	DH 2701	40.48	**37.4**	0.209	0.020	1.10	.	1.80	0.087	0.154	.	0.102	0.077	17.03	0.677	.	0.126
1	USZ HJ	37.32	**34.92**	2.35	.	.	.	0.34	0.99	.	.	.	.	23.01	.	0.047	.
1	UNS FM	35.91	**34.09**	0.276	.	(0.09)	.	0.498	(0.095)	(0.025)	0.00636	.	0.027	22.59	.	0.018	.

Number	Bi*	Ce*	Cr_2O_3	Cu*	Eu*	La*	$MgCO_3$	NiO	Pb	PbO	S	Sb*	Sc*	Sm*	SnO_2	Sr	ZnO
IGS 39	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(0.014)	.
DH 2707	.	.	.	.	.	.	.	.	.	0.00019	.	.	.	.	.	.	.
DH 2712	.	.	0.106	.	.	.	.	0.153	.	0.102	.	.	.	.	0.054	.	0.103
DH 2709	.	.	0.004	.	.	.	.	.	.	.	.	.	.	.	.	.	0.004
DH 2714	.	.	.	.	.	.	0.289	0.056	.	0.080	.	.	.	.	.	.	0.044
DH 2701	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ HJ	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
UNS FM	74	28	.	558	1.23	14	.	.	(65)	.	0.92	2.3	0.63	6.1	.	0.0527	.

CRM GABBRO

analysis listed in mass % 40 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	H_2O+	$T.H_2O$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
VS MO8	51.98	16.39	0.43	9.02	0.0390	9.61	0.85	11.53	0.088	0.22	0.31	0.46	6.39	0.16	3.27	0.21	0.1799	1.15
VS MO7	40.79	17.60	0.03	14.62	0.1300	7.76	3.73	12.35	0.12	0.70	0.82	0.75	6.46	0.15	2.05	1.08	0.1800	3.39

continued analysis listed in mg/kg except % which is mass % VS MO8: Gabbro VS MO7: Orthoclase Gabbro

Number	B	Ba	Be	Cl	Co	Cr	Cs	Cu	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	V	Y	Yb	Zn	Zr
VS MO8	7.5	272	0.8	270	48	126	1.1	40	18	26	5.5	3.2	3.7	18	7.3	4.0	31	2.7	477	199	18	2.0	84	48
VS MO7	4.5	(7480)	(1.2)	750	49	76	1.1	59	(18)	37	5.4	(2.4)	12	45	7.6	12	(25)	(3.8)	(1745)	270	.	.	65	53

CRM GABBRO

analysis listed in mass % JGb-1: 20 g units all others: 100 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	
VS 2118-81	52.04	16.94	0.37	7.36	(0.0690)	5.43	9.93	.	1.67	2.25	3.74	0.187	4.20	0.476	1.02	
USZ 51-2009	48.00	26.26	.	13.61	(0.085)	2.00	.	4.22	(+0.61 -0.13)	0.31	2.85	0.080	2.42	0.078	0.37	LOI: 1.40
VS 521-88n	46.63	14.93	.	10.68	0.13	6.23	11.33	.	(0.93)	3.09	6.81	0.167	2.72	1.03	1.72	
JGb-2	46.47	23.48	.	14.10	.	5.41	0.62	6.69	-0.14	0.059	6.18	0.13	0.92	0.017	0.56	
JGb-1 *	43.66	17.49	.	11.90	0.0133	9.43	4.79	15.06	+1.28 -0.13	0.24	7.85	0.189	1.20	0.056	1.60	
VS 2119-81	37.66	13.35	0.33	7.81	0.16	14.98	20.98	.	1.25	0.80	7.48	0.198	2.35	2.21	6.99	
VS 2117-81	37.62	13.67	(0.16)	15.75	0.0720	9.05	18.54	.	(0.12)	0.204	8.66	0.222	0.72	2.15	1.46	
GBW 07112	35.69	14.14	0.12	9.86	0.006	13.36	9.90	.	1.09	0.15	5.25	0.193	2.11	0.028	7.69	

* JGb-1 also contains (in mass %) Al: 9.26, Ca: 8.50, Fe: 10.53, K: 0.20, Mg: 4.73, Mn: 0.146, Na: 0.89, P: 0.024, Si: 20.41, and Ti: 0.96

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba%	Be	Bi	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu
VS 2118-81	.	.	.	0.1300	2.9	.	.	.	.	24	21	.	100	.	.	.
USZ 51-2009	.	.	.	0.0119	.	.	.	7.90	.	14.93	69.97	.	45.32	.	.	.
VS 521-88n	.	.	.	0.152	1.9	.	.	163	.	40	58	3.3	58	.	.	3.9
JGb-2	.	.	.	0.00365	.	.	.	3.0	.	25.8	125	0.51	11.4	.	.	0.59
JGb-1 *	.	1.09	4.03	0.00643	.	.	0.087	8.17	.	60.1	57.8	0.26	85.7	1.56	1.04	0.62
VS 2119-81	.	.	.	0.0440	0.82	.	.	.	.	69	56	.	69	.	.	.
VS 2117-81	.	.	.	0.0110	.	.	.	.	.	65	14	.	3600	.	.	.
GBW 07112	0.05	.	1.84	0.00862	.	0.04	0.09	4.2	0.006	93.0	14.5	.	28.3	1.11	0.47	0.74

Number	Ga	Gd	Ge	Hf	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	S%
VS 2118-81	24	.	1.1	.	.	.	.	46	13	.	2.0	.	.	14	20	.	42	.
USZ 51-2009	18.87	.	.	.	.	.	.	.	.	.	.	.	.	23.94	6.00	.	6.58	.
VS 521-88n	17	.	1.3	.	.	.	.	82	12	.	1.4	8.4	.	47	15	.	80	.
JGb-2	15.9	.	.	0.25	.	.	.	1.5	.	0.062	0.42	1.9	1.8	13.6	1.5	.	2.9	.
JGb-1 *	17.9	1.61	1.01	0.88	0.33	.	.	3.60	4.59	0.15	0.59	3.34	5.47	25.4	1.92	1.13	6.87	0.1910
VS 2119-81	13	.	.	.	.	.	.	.	.	.	.	.	.	63	11	.	.	0.082
VS 2117-81	21	.	2.1	.	.	.	.	.	3.3	.	2.0	.	.	28	6	.	.	0.1240
GBW 07112	23.7	1.31	1.06	0.65	0.20	0.08	0.12	1.71	1.94	0.06	.	9.3	4.10	69	.	0.84	.	0.37

Number	Sc	Se	Sm	Sn	Sr%	Ta	Tb	Te	Th	Tl	Tm	U	V	Y	Yb	Zn	Zr
VS 2118-81	24	.	.	5.5	0.0810	.	.	.	.	.	.	.	220	38	2.8	77	160
USZ 51-2009	12.33	.	.	.	0.1196	.	.	.	.	.	.	.	85.28	5.14	.	59.87	(33.49)
VS 521-88n	26	.	17	3.2	0.224	.	.	.	8	.	.	.	250	30	2.5	120	219
JGb-2	24.7	.	0.51	.	0.0438	0.29	0.15	.	0.19	.	.	.	174	4.5	0.39	48.5	11.6
JGb-1 *	35.8	.	1.49	0.48	0.0327	0.18	0.29	.	0.48	.	0.16	0.13	635	10.4	1.06	109	32.8
VS 2119-81	17	.	.	4.4	.	.	.	.	.	.	.	.	120	.	.	120	100
VS 2117-81	37	.	.	6.5	0.1040	.	.	.	.	.	.	.	960	.	2.6	136	.
GBW 07112	22.5	0.26	1.22	0.89	0.0612	.	0.20	0.010	.	0.07	0.09	.	768	4.9	0.36	118	29

CRM GOLD AND SILVER ORE

analysis listed as mass percent % and mg/kg * T = TOTAL CAN DS-1, GTS-2: 400 g USZ: 100 g all others: 200 g

Number	Au*	Ag*	Al_2O_3%	CaO%	Cu%	Fe_2O_3%	K_2O%	MgO%	MnO%	Na_2O%	Pb%	SO_3%	SiO_2%	Zn%
CAN DS-1	32.59	0.47	Al: 4.48	Ca:(6)	0.00271	Fe:(3)	K:(1)	Mg: 2.76	Mn: 0.0437	.	0.00138	S:(2.6)	Si:(26)	0.0206
USZ 38-2005	31.28	.	2.03	0.56	0.43	14.71	0.64	1.01	0.03	0.17	.	.	77.37	0.006529
USZ 20-98	10.05	3.05	1.70	0.77	.	1.92	0.37	.	0.025	0.07	.	.	92.57	.
UNS AuM	2.5	.	14.06	4.09	0.00359	5.55	1.92	1.81	0.082	3.08	.	.	66.15	.
USZ 41-2006	0.91	.	14.58	3.14	0.75	.	2.81	5.52	0.12	2.36	0.0027	3.87	52.09	0.0136
CAN CH-4	0.88	2.1	Al: 7.73	Ca: 1.96	0.20	Fe: 5.32	K: 1.80	Mg: 1.40	Mn: 0.042	Na: 3.18	.	S: 0.65	62.75	0.020
USZ 34-2002	0.79	1.70	4.79	2.53	0.001484	2.18 T	1.48	0.37	0.017	0.055	0.002	.	84.70	0.0025
US DGPM-1	0.730	.	9.56	(0.22)	.	1.92	2.74	(0.56)	.	.	.	.	79.82	.
USZ 35-2002	0.57	1.25	.	.	.	.	.	.	.	.	.	.	.	.
CAN GTS-2	0.263	.	Al:(6)	Ca:(4)	.	Fe:(9)	K:(3)	.	.	Na:(0.7)	.	S:(0.8)	Si:(24)	.
USZ 9-91	.	740	.	.	2.25	.	.	.	.	.	0.041	.	.	0.20
USZ 17-94	.	347.92	5.82	3.87	0.44	7.425 T	1.56	0.45	(2.39)	(0.13)	10.00	21.25	42.08	8.72
USZ 8-91	.	331	2.11	0.25	0.83	48.40	0.53	1.48	2.77	.	0.13	6.85	17.80	0.59
USZ 7-91	.	169	.	.	0.46	.	.	.	.	.	0.101	.	.	0.42
GBM908-13	.	151.4	.	.	0.0176	.	.	.	.	.	1.7721	S: 0.29	.	.
SRM 886	.	8.25	.	.	.	.	.	.	.	.	.	S: 1.466	.	.

Number	As%	Ba%	Cd*	Co*	Cr*	Ga*	Mo	Ni*	P_2O_5%	Sb%	Sr*	TiO_2	V*	Zr*	LOI	Other
CAN DS-1	0.6960	0.0221	(0.98)	9.5	(59)	(10)	.	48.7	P: 0.0340	(0.0107)	.	.	(147.1)	.	(13)	Hg: 82.0* Tl: 20.0*
USZ 38-2005	.	0.02	.	.	.	.	0.11%	28.27	0.05	.	88.71	0.15	39.33	.	2.59	W: 0.01%
USZ 20-98	.	.	.	.	.	.	.	.	0.037	.	.	0.08	.	.	0.95	
UNS AuM	0.08765	BaO: 0.066	.	.	47	12.9	.	.	.	.	187.7	0.39	96.4	81.0	.	Y: 14.2*
USZ 41-2006	.	0.0249	.	24.3	99.3	.	51.8*	25.4	0.27	.	259	0.93	335	78.3	5.43	
CAN CH-4	0.00082	.	1.14	26	.	.	.	.	.	.	.	Ti: 0.31	.	.	.	Se: 2.1*
USZ 34-2002	0.12	.	.	.	.	.	.	.	0.125	0.14	.	0.17	.	.	2.84	H_2O^-: 0.10%
US DGPM-1	0.0180	.	.	.	.	.	.	.	.	0.0014	.	.	.	.	.	
USZ 35-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
CAN GTS-2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(9.73)	
USZ 9-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
USZ 17-94	.	.	.	.	.	.	.	.	0.12	.	.	0.30	.	.	.	
USZ 8-91	0.53	.	20	.	.	.	.	.	0.54	0.50	.	0.12	.	.	.	Bi: 0.11%
USZ 7-91	.	.	15	.	.	.	.	.	.	.	.	.	.	.	.	
GBM908-13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
SRM 886	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

CRM GOLD AND SILVER ORE

analysis listed in mass % except * which is mg/kg 100 g units

Number	Au*	Ag*	Al_2O_3	As	Ba	CO_2	CaO	Cu	Fe	K_2O	MgO	MnO	Na_2O	P_2O_5	Pb	S	SiO_2	TiO_2
KZ 3594-86	12.1	107	.	0.18	10.7	.	.	4.16	.	.	.	.	.	.	0.34	.	.	.
KZ 3597-86	8.8	.	.	3.96	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	8.57	1.35	.	.	.	.	.	0.02	.	.	.	.	.	.	.	.	.	.
KZ 3596-86	7.6	155.4	.	1.21	25.0	.	.	13.1	.	.	.	.	.	.	0.56	.	.	.
KZ 62-86	5.7	2.3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 61-86	4.4	14.7	.	0.32	.	.	.	4.4*	.	.	.	.	.	.	.	.	.	.
KZ 3032-84	4.3	.	2.92	.	.	2.67	16.97	0.58	20.20	0.076	3.08	0.70	0.16	0.069	.	2.83	37.19	0.107
KZ 3593-86	3.2	20.9	.	0.08	6.8	.	.	0.99	.	.	.	.	.	.	0.27	.	.	.
KZ 3595-86	2.1	36.7	.	0.12	2.40	.	.	2.15	.	.	.	.	.	.	0.13	.	.	.
KZ 15-2004	1.48	17.4	.	.	.	.	.	0.02	.	.	.	.	.	.	0.18	.	.	.
KZ 17-2004	0.49	1.78	.	.	.	.	.	1.59	3.91	.	.	.	.	.	.	1.73	.	.
KZ 6585-93	0.28	11.6	.	0.075	.	.	.	0.064	.	.	.	.	.	.	0.12	.	.	.
KZ 6587-93	.	60.2	.	0.016	33.6	.	.	0.019	2.5	.	.	.	.	.	2.86	11.5	.	.
KZ 3031-84	.	37.4	4.93	.	.	2.87	28.05	3.37	15.17	0.26	1.33	0.33	0.18	.	.	2.78	33.56	0.19
KZ 6588-93	.	13.7	.	.	0.42	.	.	.	3.67	.	.	.	.	.	1.57	5.88	.	.
KZ 47-85	.	8.7	.	.	.	.	.	0.42	21.0	.	.	.	.	.	.	2.70	.	.
KZ 3030-84	.	8.6	10.85	.	.	1.04	18.94	.	13.84	0.48	2.06	0.41	0.16	0.17	.	2.04	42.32	0.54
KZ 48-85	.	7.3	5.47	.	.	2.73	29.75	1.98	15.9	0.13	0.66	0.36	0.10	0.11	.	1.94	33.77	0.147
KZ 8079-94	.	3.7	.	.	.	.	.	0.73	.	.	.	.	.	.	0.62	1.25	.	.
KZ 3029-84	.	2.1	15.18	.	.	.	.	0.30	3.11	4.06	.	0.081	1.95	0.094	.	1.59	68.09	0.42
KZ 8078-94	.	1.6	.	.	.	.	.	0.38	.	.	.	.	.	.	0.21	0.75	.	.

Number	B	Cd	Co	F	Ge*	In*	Mo	Re*	Sb	Se*	Sr	Te*	Zn
KZ 3594-86	.	0.0075	.	.	.	9.7	.	.	.	50.9	.	210.4	2.25
KZ 3597-86	1.08	.	0.17	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 3596-86	.	0.00525	.	.	.	13.1	.	.	.	.	.	.	1.22
KZ 62-86	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 61-86	.	.	.	.	.	.	.	.	0.076	.	.	.	.
KZ 3032-84	.	.	0.20	.	.	.	.	.	.	4.2	.	34.4	.
KZ 3593-86	.	0.01628	.	.	.	5.5	.	.	.	20.0	.	33.3	4.63
KZ 3595-86	.	0.00523	.	.	.	2.5	.	.	.	58.2	.	72.6	0.81
KZ 15-2004	.	.	.	.	.	.	.	.	.	.	.	.	0.055
KZ 17-2004	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 6585-93	.	0.0096	.	.	.	.	.	.	.	.	.	.	0.60
KZ 6587-93	.	0.012	.	.	.	.	.	.	0.013	.	0.69	.	2.72
KZ 3031-84	.	.	.	0.056	.	.	0.18	0.40	.	13.1	.	9.1	.
KZ 6588-93	.	0.013	.	.	4.4	.	.	.	0.0066	.	0.029	.	4.68
KZ 47-85	.	.	.	.	.	.	0.012	.	.	.	.	.	.
KZ 3030-84	.	.	.	0.048	.	.	0.38	0.30	.	.	.	.	.
KZ 48-85	.	.	.	0.054	.	.	.	0.04	.	5.7	.	.	.
KZ 8079-94	.	0.016	.	.	.	.	.	2.9	.	.	.	.	0.41
KZ 3029-84	.	.	.	0.074	.	.	0.0086	0.43	.	.	.	.	.
KZ 8078-94	.	0.0036	.	.	.	.	.	0.72	.	.	.	.	0.15

CRM GOLD AND SILVER ORE

analysis listed in mg/kg

Number	Ag	Au	Units
NCS DC90006	805.2	.	50 g
NCS DC90005	614.9	.	50 g
NCS DC90004	490.6	.	50 g
NCS DC90003	327.8	.	50 g
NCS DC90002	123.2	.	50 g
NCS DC90001	51.59	.	50 g
USZ 39-2005	49.33	10.92	100 g
USZ 40-2005	27.06	7.38	100 g
USZ 29-2000	6.05	42.26	100 g
CAN MA-1b	(4)	17.0	200 g
CAN MA-3a	(2.4)	8.56	200 g
GBW 07208	2.06	0.051	1000 g
USZ 30-2000	1.18	5.92	100 g
USZ 31-2000	1.07	3.28	100 g
CAN MA-2c	(0.51)	3.02	400 g
GBW 07207	0.33	0.008	1000 g

CRM GOLD AND SILVER ORE

minesite carbon material

analysis listed in mg/kg 10 g units

Number	Au	Ag
GLC302-3	7467	1248
GLC2	6187	1024
GLC906-2	4060	370
GLC906-1	2962	245
GLC907-2	1059	189
GBC907-1	507	109
GBC303-2	476	755
GLC301-2	450	112
GBC12	448	.
GEOSTC1	429	361
GBC902-3	285	83
GBC303-1	261	1339
GBC907-3	260	77
GBC906-2	246	101
GBC302-3	236	30
GBC902-1	220	60
GBC907-2	194	63
GBC906-1	192	65
GBC7	191	.
GBC900-2	181	.
GBC302-2	173	22
GBC901-2	164	48

CRM GOLD ORE

analysis listed in mg/kg (ppm)

Number	Au	Units
NCS DC73504	10.0	1000 g
USZ 22-98	3.70	1000 g
NCS DC73503	3.14	1000 g
SARM 56	2.69	500 g
NCS DC73502	1.09	1000 g
USZ 21-98	1.06	100 g
NCS DC73501	0.30	1000 g
KZ 63-86	0.023	100 g
KZ 64-86	0.0076	100 g
KZ 65-86	0.0067	100 g

CRM GOLD ORE

mg/kg, ppm 1 kg units

Number	Au Fire	Au Aqua
G306-6	48.53	48.57
G901-8	47.24	.
G306-5	33.52	33.82
G902-2	22.39	21.54
G306-4	21.57	21.73
G904-3	13.66	13.73
G308-5	13.30	13.07
G904-1	12.66	12.53
G397-8	11.65	11.82
G903-9	11.26	11.15
G908-8	9.65	9.41
G305-7	9.59	9.36
G995-4	8.67	8.48
G306-3	8.66	8.60
G307-7	7.87	7.75
G907-6	7.25	7.30
G906-8	7.24	7.26
G907-8	6.78	6.73
G308-4	6.77	6.65
G905-10	6.75	6.69
G996-7	5.99	5.91
G905-6	5.96	5.86
G998-8	5.85	5.46
G301-10	5.57	5.45
G904-8	5.53	5.51
G997-9	5.16	5.18
G307-5	4.87	4.84
G396-8	4.82	4.75
G908-7	4.82	4.77
G397-2	4.49	4.33
G998-4	4.36	4.27
G301-5	4.29	4.29
G305-4	4.18	4.11
G303-2	4.15	4.11
G903-6	4.13	4.08
G398-10	4.07	3.99
G397-6	3.95	3.82
G905-7	3.92	3.89
G907-4	3.84	3.85
G997-8	3.52	3.47
G307-1	3.37	3.35
G906-3	3.33	3.17
G900-7	3.22	3.19
G900-5	3.21	3.19
G305-8	3.14	2.80
G999-4	3.02	2.93
G998-1	2.95	2.93
G398-6	2.94	2.86
G907-3	2.88	2.82
G901-3	2.87	2.81
G995-1	2.75	2.64
G901-1	2.58	2.50
G905-8	2.55	2.46
G302-2	2.50	2.44
G308-3	2.50	2.47
G906-2	2.46	2.40
G308-8	2.45	2.41
G305-5	2.43	2.36
G905-3	2.37	2.34
G302-3	2.33	2.30
G302-7	2.14	2.14
G307-8	1.99	1.97
G300-10	1.99	1.95
G301-3	1.96	1.89
G906-4	1.93	1.90

Number	Au Fire	Au Aqua

CRM GOLD ORE

mg/kg, ppm 1 kg units

Number	Au Fire	Au Aqua
G303-3	1.93	1.90
G905-9	1.86	1.73
G901-2	1.76	1.70
G397-3	1.72	1.69
G997-6	1.68	1.67
G301-13	1.68	1.65
G906-1	1.67	1.64
G302-5	1.66	1.64
G901-5	1.65	1.61
G904-7	1.58	1.54
G907-7	1.54	1.53
G300-9	1.53	1.51
G901-7	1.52	1.53
G399-2	1.46	1.44
G997-3	1.41	1.41
G902-7	1.41	1.37
G307-4	1.40	1.36
G907-5	1.34	1.31
G308-6	1.28	1.23
G02	1.20	1.20
G301-8	1.19	.
G901-13	1.18	1.14
G905-1	1.16	1.14
G308-2	1.11	1.08
G307-2	1.08	1.04
G307-6	1.07	1.04
G300-8	1.07	0.99
G306-2	1.05	1.05
G908-3	1.03	1.00
G300-7	1.00	0.98
G302-6	0.99	0.99
G908-4	0.96	0.93
G999-3	0.95	0.90
G907-2	0.89	0.86
G399-5	0.87	0.85
G301-1	0.85	0.83
G999-1	0.82	0.75
G998-3	0.81	0.80
G998-6	0.80	0.80
G907-1	0.79	0.77
G305-3	0.72	0.70
G901-9	0.69	0.66
G398-4	0.66	0.64
G999-2	0.63	0.62
G905-5	0.52	0.52
G905-2	0.52	0.51
G996-4	0.51	0.47
G398-2	0.50	0.42
G306-1	0.41	0.41
G998-9	0.38	0.38
G904-6	0.36	0.36
G305-2	0.32	0.30
G308-7	0.27	0.26
G303-8	0.26	0.25
G307-3	0.24	0.23
G308-1	0.23	0.22
G903-10	0.21	0.22
G908-2	0.21	0.21
G302-10	0.18	0.16
G908-1	0.06	0.06
G300-1	0.03	0.03
G01	0.02	0.02

Number	Au Fire	Au Aqua

CRM GOLD ORE

ng/g, ppb 1 kg units

Number	Au
GLG904-4	204.08
GLG303-1	164.48
GLG304-1	151.64
GLG304-4	121.43
GLG305-1	101.57
NCS DC73396	100
GLG907-5	81.81
GLG304-2	67.20
GLG908-4	66.63
GLG305-3	55.48
GLG908-1	52.65
GLG908-5	52.56
GLG307-4	52.29
NCS DC73395	50
GLG908-3	34.86
GLG302-3	30.79
GLG307-5	27.57
NCS DC73506	25
GLG302-5	21.95
GLG904-2	21.55
NCS DC73394	21.5
GLG901-1	18.99
GLG902-3	17.64
GLG302-2	16.67
NCS DC73393	11.4
GLG902-2	10.66
GLG901-2	9.92
NCS DC73392	5.3
GLG907-1	4.18
GLG307-2	3.83
GLG307-1	2.86
GLG307-3	2.83
NCS DC73391	1.5
NCS DC73505	0.8
NCS DC73390	0.5

CRM GOLD ORE

analysis listed in ppm except % which is mass 200 g units

Number	Au Fire	Au Aqua	Ag	As	Cu	Ni	Pb	S%	Zn
GBMS304-2	6.04	5.74	5.1	380	14325	58	820	3.34	57
GBMS304-4	5.67	5.29	3.4	535	9786	732	271	6.27	149
GBMS304-6	4.58	4.35	6.1	2660	4241	2165	351	2.01	1265
GBMS304-1	3.06	2.96	1.4	168	3156	380	197	1.33	120
GBMS304-3	2.68	2.51	1.5	263	3637	376	159	2.35	143
GBMS304-5	1.62	1.59	0.8	99	2293	21	65	1.04	13

Fire = Fire Assay, Aqua = Aqua Regia

CRM GRANITE

analysis listed in mass %

Number	SiO_2	Al_2O_3	C	CO_2	CaO	F	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
JG-2	76.83	12.47	.	.	0.70	(0.0972)	0.57	0.33	0.97	+0.33 -0.12	4.71	0.037	0.016	3.54	0.002	0.044	.
SARM 1	75.70	12.08	.	(0.10)	0.78	0.42	1.30	(0.6)	.	.	4.99	(0.06)	.	3.36	.	(0.09)	.
VS 3333-85	74.76	10.64	.	(0.1)	0.32	0.062	1.61	4.50	.	(0.30)	4.64	0.10	0.120	4.24	0.024	0.26	.
GUW GM	73.42	13.55	.	0.28	1.07	0.067	1.13	2.01	.	0.35	4.76	0.37	0.043	3.78	0.062	2.12	.
VS 520-84n *	73.36	13.84	0.04	(0.02)	0.14	0.30	1.41	2.23	.	0.2	4.14	0.05	0.20	5.46	0.013	0.072	.
GBW 07103	72.83	13.40	.	(0.15)	1.55	0.235	1.02	.	2.14	+0.60	5.01	0.42	.	3.13	.	.	(0.70)
USZ 47-2008	72.37	14.07	.	.	1.15	.	1.81	2.44	.	.	4.68	0.38	0.06	3.63	0.13	0.30	0.64
USZ 28-99	71.61	16.13	.	.	0.39	1.25	0.29	.	0.51	-(0.05)	3.52	(0.29)	0.13	5.25	0.028	(0.03)	1.14
SARM 48	67.11	11.24	.	.	8.90	.	(0.2)	0.58	.	.	4.26	0.18	0.02	3.22	(0.09)	0.10	.
NCS DC73376	66.3	16.3	.	0.35	2.66	0.0660	1.6	3.12	.	(1.0)	2.60	1.63	.	5.3	.	.	1.28

* VS 520-84n also contains 0.027% rare earth oxides.

continued analysis listed in mg/kg except % which is mass % and * which is ng/g

Number	Ag	Al%	As	B	Ba	Be	Bi	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cs_2O%	Cu	Dy
JG-2	(0.019)	6.60	(0.68)	(1.78)	81.0	3.26	(0.64)	0.50	(0.004)	48.3	.	3.62	6.37	6.79	.	0.49	10.5
SARM 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3333-85	(0.06)	.	(4)	11	90	5	.	.	.	90	.	1.3	3.1	4.5	.	12	(10)
GUW GM	(0.09)	.	4.1	11	340	(4.8)	.	.	.	65	.	3.7	11	8.1	.	13	(5.4)
VS 520-84n	0.10	.	(1)	(3)	19	10	(3)	.	0.20	62	.	1.4	12	12	.	31	(6)
GBW 07103	0.033	.	2.1	24	343	12.4	0.53	.	0.029	108	127	3.4	3.6	38.4	.	3.2	10.2
USZ 47-2008	.	.	2.28	.	350	8.63	1.03	.	.	64.38	.	2.71	182	17.02	.	7.36	4.42
USZ 28-99	.	.	(3)	.	.	.	.	.	.	(25)	.	.	(130)	.	0.012	8	.
SARM 48	.	.	.	.	(290)	.	.	.	.	(850)	.	.	23	.	.	(10)	.
NCS DC73376	0.027	.	0.25	15	1140	1.7	0.094	.	(0.06)	48	(127)	7.5	23	2.6	.	(2.6)	1.5

Number	Er	Eu	F	Fe%	Ga	Gd	Ge	Hf	Hg	Ho	K%	La	Li	Li_2O%	Lu	Mg%	Mn%
JG-2	6.04	0.10	.	0.68	18.6	8.01	(1.70)	4.73	(0.0033)	1.67	3.91	19.9	42.2	.	1.22	0.02	0.012
SARM 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3333-85	(6)	0.4	.	.	27	.	2.2	12	.	.	.	45	52	.	0.9	.	.
GUW GM	(2.2)	0.60	.	.	15	(5.2)	(1.6)	5.1	(0.0033)	(1.0)	.	41	50	.	0.40	.	.
VS 520-84n	(6)	(0.1)	.	.	40	(7)	3.3	.	.	.	.	32	390	.	(1.9)	.	.
GBW 07103	6.5	0.85	2350	.	19	9.3	2.0	6.3	0.0041	2.05	.	54	131	.	1.15	.	0.0463
USZ 47-2008	2.37	0.58	.	.	22.80	4.95	1.50	4.75	.	0.85	.	29.59	124	.	0.35	.	.
USZ 28-99	.	.	.	.	.	.	.	.	.	.	.	(15)	.	0.37	.	.	.
SARM 48	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC73376	0.76	0.10	.	.	18	2.4	0.93	3.3	0.0004	0.27	.	25	24	.	0.11	.	0.0430

Number	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Rb	Rb_2O%	S	Sb	Sc	Se	Si%	Sm	Sn	Sr
JG-2	0.37	2.63	14.7	26.4	(4.35)	0.001	31.5	6.20	301	.	(7.0)	(0.057)	2.42	.	35.91	7.78	3.00	17.9
SARM 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3333-85	1.7	.	17	50	6	.	10	.	140	.	(160)	(0.5)	4.6	.	.	10	5	8
GUW GM	1.1	.	18	30	6.8	.	30	(7.2)	260	.	.	(0.51)	4.8	.	.	4.9	4.4	133
VS 520-84n	1.0	.	380	18	11	.	230	5	0.11%	.	130	(0.7)	5	.	.	5	11	20
GBW 07103	3.5	.	40	47	2.3	0.0405	31	12.7	466	.	380	0.21	6.1	(0.04)	.	9.7	12.5	106
USZ 47-2008	3.06	.	15.22	27.10	5.76	.	24.81	7.27	275	.	.	0.19	4.36	.	.	5.54	13.30	111
USZ 28-99	.	.	71	.	10	.	64	.	.	0.24	.	.	(7)	.	.	.	.	.
SARM 48	(5)	.	202	.	.	.	135	.	.	.	.	.	.	.	.	.	.	29
NCS DC73376	(0.3)	.	4	21	12.2	0.0570	7.7	5.7	57	.	(50)	0.063	5.0	0.019	.	3.3	0.8	690

Number	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
JG-2	2.76	1.62	.	1.62	0.026	1.55	1.16	11.3	3.78	23.0	86.5	6.85	13.6	97.6	20 g
SARM 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
VS 3333-85	1.1	0.4	.	80	.	.	.	1.8	6	(1.1)	60	7	140	470	100 g
GUW GM	1.7	0.7	.	36	.	.	.	6.4	11	1.6	26	3.1	34	149	50 g
VS 520-84n	24	(0.8)	.	130	.	.	1.1	63	5	2.3	62	12	270	690	100 g
GBW 07103	7.2	1.65	0.021	54	0.1720	1.93	1.06	18.8	24	8.4	62	7.4	28	167	70 g
USZ 47-2008	2.56	0.79	.	19.35	.	1.72	0.37	5.44	14.03	0.56	25.19	2.36	54.59	169	100 g
USZ 28-99	54	.	.	.	.	.	.	.	.	.	.	.	0.086%	46	100 g
SARM 48	.	.	.	113	.	.	.	.	(8)	.	436	.	53	300	100 g
NCS DC73376	(0.33)	0.29	.	1.9	0.178	(0.20)	0.11	(0.4)	45	0.42	7.4	0.69	46	(90)	70 g

CRM GRANODIORITE

analysis listed in mass %

Number	SiO_2	Al_2O_3	Al	CO_2	CaO	Fe	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O		K_2O	MgO	MnO	Na_2O	P_2O_5	Si	TiO_2
JG-1a	72.30	14.30	7.57	.	2.13	1.40	1.36	0.51	2.00	+0.59	-0.12	3.96	0.69	0.057	3.39	0.083	33.80	0.25
JG-1	72.30	14.24	7.54	.	2.20	1.52	1.61	0.38	2.18	+0.54	-0.07	3.98	0.74	0.063	3.38	0.099	33.80	0.26
JG-3	67.29	15.48	8.19	.	3.69	2.58	1.83	1.62	3.69	+0.67	-0.17	2.64	1.79	0.071	3.96	0.122	31.45	0.48
US GSP-2	66.6	14.9	7.88	.	2.10	3.43	.	.	4.90		.	5.38	0.96	.	2.78	0.29	31.1	0.66
VS 2125-81	64.08	15.35	.	0.14	3.93	.	2.87	5.23	.		.	3.98	1.87	0.160	3.25	0.228	.	0.517
GBW 07111	59.68	16.56	.	0.15	4.72	.	3.08	2.64	.	0.88		3.50	2.81	0.094	4.05	0.34	.	0.77

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	As	Au*	B	Ba%	Be	Bi	Br	C%	Ca%	Cd	Ce	Cl%	Co	Cr	Cs	Cu
JG-1a	(0.023)	(0.43)	0.21	3.95	0.0470	3.16	(0.43)	.	(0.0295)	1.52	(0.026)	45.0	(0.0065)	5.90	17.6	10.6	1.67
JG-1	0.034	0.33	0.11	6.87	0.0466	3.15	0.50	(0.068)	(0.0216)	1.57	0.040	45.8	0.00581	4.06	53.2	10.1	2.52
JG-3	(0.029)	(0.37)	0.17	(2.15)	0.0466	(1.60)	(0.05)	.	(0.0120)	2.64	(0.054)	40.3	(0.0156)	11.7	22.4	1.78	6.81
US GSP-2	.	.	.	.	0.1340	(1.5)	.	.	.	1.50	.	410	.	7.3	20	(1.2)	43
VS 2125-81	.	.	.	27	0.14	3.7	.	.	.	.	.	.	.	13	37	.	57
GBW 07111	0.066	0.4	.	3.92	0.1900	2.11	0.05	(0.34)	(0.057 Org)	.	0.08	112	0.023	15.6	37.6	0.97	8.8

Number	Dy	Er	Eu	F%	Ga	Gd	Ge	Hf	Hg*	Ho	I*	In	Ir*	K%	La	Li	Lu
JG-1a	4.44	2.57	0.70	0.0439	16.5	4.08	(1.5)	3.59	(4.1)	0.82	.	(0.025)	.	3.29	21.3	79.5	0.44
JG-1	4.14	2.16	0.73	0.0498	17.8	4.28	1.44	3.56	16.5	0.81	(0.012)	(0.044)	.	3.30	22.4	86.6	0.39
JG-3	2.59	1.52	0.90	(0.0317)	17.1	2.92	(1.06)	4.29	(2.4)	0.38	.	.	(0.0016)	2.19	20.6	20.9	0.26
US GSP-2	(6.1)	(2.2)	2.3	(0.3000)	22	(12)	.	(14)	.	(1.0)	.	.	.	4.48	180	(36)	(0.23)
VS 2125-81	.	.	.	.	22	.	1.8	.	.	.	.	.	.	.	.	20	.
GBW 07111	3.20	1.57	1.91	0.084	20.8	5.09	1.00	5.2	35	0.60	(78)	0.08	.	.	60.5	16.2	0.24

Number	Mg%	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb%	Pd*	Pr	Rb%	S%	Sb	Sc	Se	Sm
JG-1a	0.42	0.044	0.45	2.51	11.4	20.4	6.91	0.036	0.00264	(<0.2)	5.63	0.0178	(0.0011)	(0.048)	6.21	.	4.53
JG-1	0.45	0.049	1.75	2.51	12.4	19.3	7.47	0.043	0.00254	(<0.2)	4.83	0.0182	0.00109	0.13	6.53	0.0030	4.62
JG-3	1.08	0.055	0.45	2.94	5.88	17.2	14.3	0.053	0.00117	(<0.2)	4.70	0.00673	(0.0055)	(0.08)	8.76	.	3.39
US GSP-2	0.58	0.0320	(2.1)	2.06	27	200	17	0.13	0.0042	.	(51)	0.0245	.	.	6.3	.	27
VS 2125-81	.	.	3.22	.	8.8	.	15	.	0.016	.	.	0.016	0.019	.	13	.	.
GBW 07111	.	.	0.47	.	10.6	48.1	24.4	.	0.00198	.	13.2	0.00701	0.011	0.06	10.3	0.03	7.74

Number	Sn	Sr%	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn%	Zr%	Units
JG-1a	4.47	0.0187	1.90	0.81	.	12.8	0.15	0.98	0.38	4.69	22.7	12.4	32.1	2.70	0.00365	0.0118	100 g
JG-1	3.60	0.0184	1.79	0.78	.	13.2	0.16	1.03	0.41	3.47	25.2	(1.58)	30.6	2.47	0.00411	0.0111	20 g
JG-3	1.40	0.0379	0.70	0.46	.	8.28	0.29	(0.40)	0.24	2.21	70.1	(14.1)	17.3	1.77	0.00465	0.0144	100 g
US GSP-2	.	0.0240	.	.	.	105	0.40	(1.1)	(0.29)	2.40	52	.	28	1.6	0.0120	0.0550	50 g
VS 2125-81	8.0	0.048	.	.	.	.	.	.	.	.	90	.	.	.	0.012	0.021	40 g
GBW 07111	1.44	0.1198	0.62	0.68	0.011	10.9	.	0.39	0.26	1.40	104	0.19	15.5	1.56	0.00854	0.0224	100 g

CRM GRAPHITE

analysis listed in mass % 100 g units

Number	Al_2O_3	C	CO_2	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	Ni	Rb	SiO_2	TiO_2	Zn	Zr	LOI
USZ 33-2000	8.46	13.38	2.45	.	3.61	2.09	.	0.07	0.51	.	.	52.84	0.49	.	.	17.0
USZ 32-2000	9.33	14.43	4.10	7.05	3.48	2.54	1.94	0.03	0.47	0.007	0.014	52.20	0.57	0.018	0.012	22.21

CRM GRAPHITE - SYNTHETIC

available as a set or individually analysis listed in mg/kg 50 g units

Number	Al	As	Ca	Cl	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	NO_3	Na	Ni	Pb
CIBA KD-2	35	(0.05)	98	(4.1)	(0.10)	1.3	1.0	180	(41)	(21)	23	(0.22)	(0.5)	(20)	3.9	(1.6)
CIBA LD-4	33	(0.06)	126	(3.3)	(0.11)	3.4	1.3	149	(25)	(7.5)	3.5	(0.62)	(0.5)	(13)	5.5	(1.1)
CIBA KD-3	15	(0.04)	62	(4.4)	(0.07)	0.69	0.81	111	(39)	(22)	13	(0.44)	(0.5)	(17)	4.2	(0.90)
CIBA KD-1	12	(0.09)	74	(5.4)	(0.19)	3.2	0.97	428	(21)	(6.7)	56	(0.95)	(0.5)	(10)	6.0	(1.3)
CIBA KD-6	8.4	(0.04)	79	(3.3)	(0.03)	0.44	0.62	37	(17)	.	4.3	(0.39)	(0.5)	(7)	2.0	(1.2)
CIBA PD-5	7.7	(0.03)	18	(3.4)	(0.03)	0.74	0.53	36	(17)	(3.1)	0.34	(0.11)	(0.5)	(2)	1.2	(<1)
CIBA PD-7	5.5	(0.03)	22	(6.4)	(0.03)	2.2	0.51	59	(17)	.	1.1	(0.25)	(0.5)	(2)	1.1	(1.0)

continued

Number	S	SO_4	Sb	Si	Sn	Sr	Ta	Ti	V	W	Zn	Zr
CIBA KD-2	(44)	(88)	(0.05)	(145)	(<0.2)	(2.8)	(0.005)	(46)	(3.6)	(<0.08)	(4.4)	(3.7)
CIBA LD-4	(68)	(98)	(0.03)	(404)	.	(2.7)	(0.011)	(49)	(4.3)	(<0.06)	(2.9)	(8.6)
CIBA KD-3	(43)	(85)	(0.02)	(147)	.	(1.9)	(0.006)	(38)	(3.8)	(<0.08)	(1.2)	(4.5)
CIBA KD-1	(45)	(93)	(0.03)	(390)	(<0.2)	(1.8)	(0.008)	(53)	(6.6)	(0.04)	(2.3)	(7.5)
CIBA KD-6	(44)	(73)	(0.03)	(66)	.	(1.9)	(0.006)	(51)	(4.9)	(0.03)	(1.7)	(6.0)
CIBA PD-5	(15)	(12)	(0.02)	(53)	(<0.2)	(0.6)	(0.004)	(20)	(2.0)	(<0.035)	(0.8)	(2.4)
CIBA PD-7	(23)	(25)	(0.02)	(50)	.	(1.3)	(0.005)	(29)	(2.0)	(0.03)	(0.9)	(4.5)

CRM GREISEN

analysis listed in mass% 50 g units

Number	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Li_2O	F	Rb	Sn
GUW GNA	71.47	0.022	14.7	5.92	3.81	0.168	0.034	0.62	0.08	2.63	0.49	3.32	0.202	0.19

continued analysis listed in mg/kg

Number	As	Ba	Bi	Cs	Dy	Mo	Ta	U	Zn	Zr
GUW GNA	7	51	220	45	3	100	29	22	78	70

CRM GYPSUM ROCK

analysis listed in mass % 100 g units

Number	SO_3	CaO	Al_2O_3	CO_2	Fe_2O_3*	H_2O+G	H_2O+C	K_2O	MgO	Na_2O	P_2O_5	SiO_2	SrO	%Total	L.O.I.**
DOMTAR GYP A	46.2	32.9	0.10	0.47	0.05	19.4	.	0.021	0.18	0.009	0.011	0.45	0.11	99.90	20.06
DOMTAR GYP B	41.0	32.8	0.17	5.0	0.07	17.80	.	0.05	1.80	0.021	0.010	1.05	0.14	99.91	22.85
DOMTAR GYP D	36.7	28.2	2.03	3.6	1.08	16.39	0.37	0.54	1.73	0.07	0.025	8.7	0.18	99.62	20.82
DOMTAR GYP C	33.0	30.4	0.79	11.2	0.40	14.37	.	0.36	5.35	0.022	0.018	3.5	0.35	99.76	25.93

* Total iron calculated as Fe_2O_3
H_2O+C Water from clay between 450-550'C.

** Loss on ignition at 1000'C
H_2O+G Water from $CaSO_4$ $2H_2O$ and some $CaSO_4$ $1/2H_2O$ between 80-300'C.

continued analysis listed in mg/kg

Number	As	Ba	Br	Cd	Ce	Cl	Co	Cr	Cs	Eu	Hf	La
DOMTAR GYP A	0.19	(28)	(0.5)	0.51	(0.70)	12	(0.2)	(2)	(0.15)	0.060	0.26	0.24
DOMTAR GYP B	(0.2)	25	0.4	.	1.24	34	(0.7)	(2)	(0.2)	0.07	(0.32)	0.56
DOMTAR GYP D	3	106	1.3	.	9	234	2.4	9	1.3	0.17	0.6	5
DOMTAR GYP C	2.4	53	1.7	.	5	156	1.2	4	0.41	0.12	(0.36)	3

continued

Number	Lu	Mn	Rb	Sb	Sc	Sm	Ta	Th	Ti	U	V	Yb	Zn	Zr
DOMTAR GYP A	(0.006)	19	(0.8)	0.04	0.09	0.041	.	(0.1)	(78)	0.10	.	0.020	7	(9)
DOMTAR GYP B	0.007	9	(4)	0.024	0.16	0.074	.	0.15	74	0.230	.	0.03	7	(16)
DOMTAR GYP D	0.067	200	25	0.28	2	0.83	0.15	1.3	473	0.65	17	0.44	16	29
DOMTAR GYP C	(0.05)	65	11	0.16	0.8	0.45	.	0.51	230	0.72	.	0.17	15	28

CRM GYPSUM ROCK

analysis listed in mass %

Number	SO_3	CaO	Al_2O_3	CO_2	Cl-	Fe_2O_3	H_2O	K_2O	MgO	Na_2O	SiO_2	SrO	TiO2	LOI	Units
GBW 03109a	51.91	39.24	0.34	(4.02)	0.033	0.16	0.39	0.094	1.74	0.065	1.68	(0.27)	0.016	4.55	50 g
GBW 03111a	40.72	32.30	0.14	(5.44)	0.0032	0.11	17.95	0.026	2.47	0.014	0.63	(0.096)	0.010	23.60	50 g
GBW 03111	37.64	30.28	1.14	(5.80)	0.013	0.38	16.62	0.23	3.19	0.014	4.16	(0.077)	.	(22.88)	50 g
NCS DC62106a *	36.30	28.92	2.23	.	.	0.66	*	0.39	2.46	0.08	6.27	.	0.09	22.12	20 g
GBW 03110	32.55	28.50	1.92	(8.63)	0.019	0.63	14.27	0.38	4.92	0.021	7.21	(0.071)	.	(23.55)	50 g

* NCS DC62106a also contains 0.17% adhered water and 16.00% crystallized water.

RM GYPSUM BYPRODUCT

analysis listed in mass % based on a dry (40'C) sample — 100 g units

Number	SO_3	CaO	Al_2O_3	CO_2	Cr_2O_3	$T.Fe_2O_3$	H_2O+	K_2O	MgO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	V_2O_5	%Total	LOI*
DOMTAR FGD-1	46.4	32.7	0.023	0.02	0.0002	0.014	20.70	0.007	0.007	0.005	0.03	0.13	0.012	.	0.0003	100.05	21.04
DOMTAR FGD-2	45.6	32.8	0.033	0.62	0.0015	0.043	20.38	0.01	0.019	0.02	0.05	0.21	0.024	.	0.0009	98.81	21.33
DOMTAR TIG-1	43.4	32.3	0.57	1.41	0.036	0.26	20.3	0.008	0.12	0.036	0.04	0.11	0.42	0.82	0.10	99.93	22.03

H_2O+ combined water at 250'C * Loss on ignition at 1000'C (1 hr)

continued analysis listed in mg/kg

Number	As	Ce	Cl	Co	Cr	Dy	Eu	F	Hf	La	Mn	Sb
DOMTAR FGD-1	0.10	0.5	(100)	0.02	1.2	.	0.02	95	.	0.35	2.0	0.03
DOMTAR FGD-2	0.48	1.7	(115)	0.07	10.2	0.48	0.09	320	0.06	2.18	2.5	0.024
DOMTAR TIG-1	0.22	6	400	0.26	246	0.42	0.08	230	3.0	2.7	36	0.05

Number	Sc	Se	Sm	Ta	Tb	Th	Ti	U	V	Yb	Zn	Zr
DOMTAR FGD-1	0.023	0.8	0.07	.	.	0.03	75	.	1.5	.	1.7	.
DOMTAR FGD-2	0.166	3.0	0.52	.	0.07	0.38	75	1.10	5.1	0.27	2.3	(10)
DOMTAR TIG-1	17.1	.	0.65	3.1	(2)	2.14	6154	2.5	560	0.31	(32)	(80)

CRM HORNBLENDITE

analysis listed in mass %

Number	Al_2O_3	CaO	FeO	$T.Fe_2O_3$	K_2O	MgO	Mn	MnO	Na_2O	P_2O_5	S	SiO_2	Ti	TiO_2	LOI
VS 2113-81	14.24	11.04	9.72	18.26	0.382	12.70	.	0.144	2.14	.	.	37.95	.	1.91	.
NCS DC73377	13.8	9.6	10.8	14.8	0.48	7.2	0.1600	.	2.07	.	0.054	49.6	0.553	.	1.06
JH-1	5.66	15.02	(8.09)	10.27	0.53	16.73	.	0.19	0.71	0.099	.	48.18	.	0.67	.

continued analysis listed in mg/kg except * which is ng/g

Number	As	B	Ba	Be	Cd	Ce	Co	Cr	Cs	Cu%	Dy	Er	Eu	F	Ga	Gd
VS 2113-81	.	.	99	.	.	.	74	15	.	0.074	.	.	.	.	25	.
NCS DC73377	25	12	62	0.34	0.14	7.8	52	137	1.9	0.0085	3.5	2.3	0.92	206	17.3	2.7
JH-1	.	.	106	.	.	17.6	51.5	616	0.87	0.00086	2.5	1.2	0.86	.	7.9	.

Number	Ge	Hf	Hg*	Ho	La	Li	Lu	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	Sc
VS 2113-81	.	.	.	.	.	.	.	1.3	.	.	57	.	4.9	.	.	58
NCS DC73377	1.46	1.5	3.2	0.84	2.9	11	0.38	0.16	2.7	6.4	119	375	.	1.25	30	43
JH-1	.	1.4	.	0.53	7.9	.	0.17	0.77	4.2	11.6	58.2	.	2.6	.	14.4	77.6

Number	Se	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr	Units
VS 2113-81	.	.	2.9	.	.	.	.	.	.	39	.	.	1.5	1370	21	40 g
NCS DC73377	0.083	2.1	.	142	.	0.57	.	0.36	.	300	0.34	20	2.4	100	.	70 g
JH-1	.	3.1	.	153	0.23	0.52	1.4	.	0.58	228	.	13.7	1.2	61.8	48.3	100 g

IRON PELLETS

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = total

#	Number	Fe	Fe(met)	FeO	Al	Al_2O_3	Ca	CaO	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	VS P10/2	91.1	87.6	(2.8)	.	0.28	.	1.61	.	0.29	.	.	.	0.088	0.0103	0.0059	.	4.25	.	.
1	SRM 691	90.8T	84.6	.	.	1.22	.	0.63	.	0.52	.	0.043	.	0.186	0.006	0.008	.	3.7	.	0.27
2	BS 105	65.95	.	.	0.10	.	0.50	.	0.19	.	0.09	.	0.017	.	0.008	(0.001)	2.14	.	0.008	.
1	NCS DC14004a	65.58T	.	1.57	.	0.71	.	2.37	.	0.039	0.102	.	.	0.0047	0.038	0.0043	.	3.06	0.029	.
1	VS R29	64.95	.	0.48	.	0.38	.	0.45	.	0.149	.	.	.	.	0.0123	0.0118	.	6.13	.	.
1	VS R28	63.01	.	1.16	.	0.37	.	4.09	.	0.194	.	.	.	.	0.0121	0.087	.	5.11	.	.
1	NCS DC28020	60.77T	.	0.97	.	1.25	.	1.08	.	1.99	0.110	.	.	.	0.021	0.019	.	8.25	0.063	.
1	NCS DC28021	59.95T	.	4.20	.	2.16	.	1.75	.	1.82	0.113	.	.	.	0.019	0.048	.	7.89	0.084	.
1	VS R3/2	58.72	.	2.53	.	2.50	.	4.47	.	2.48	.	0.232	.	.	0.0027	0.005	.	3.74	.	2.49
1	VS R23/1	58.7	.	.	.	.	.	4.45	.	.	.	.	.	.	.	.	.	3.75	.	.

continued VS R23: 150 g units all others: 100 g units

Number	As*	Bi*	C	Cd*	Co	Cr	Cu	K	K_2O	Mo*	N*	Ni	Pb*	Sn	V	V_2O_5	Zn
VS P10/2	(2)	(0.2)	1.66	.	.	.	0.0021	.	0.053	.	.	.	1.7	.	.	.	0.0017
SRM 691	(14)	.	0.12T	(<5)	0.030	(0.03)	0.032	(0.06)	.	(<20)	(50)	(0.3)	(<20)	(<0.0010)	(0.0135)	.	(0.0040)
BS 105	13	.	.	.	(0.0004)	0.013	0.001	0.014	.	.	.	0.004	(3)	(0.001)	0.003	.	(0.001)
NCS DC14004a	.	.	.	.	.	.	.	.	0.011	.	.	0.0024	.	.	.	.	.
VS R29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS R30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC28020	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC28021	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS R3/2	.	.	.	.	0.020	.	.	.	.	.	.	.	.	.	0.56	.	
VS R23/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM IRON FORMATION SAMPLES

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	CO_2	FeO	Fe_2O_3	H_2O+	F	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2
CAN FER-4	1.7	2.23	4.86	15.54	22.7	0.72	(0.02)	0.29	1.41	0.19	0.05	0.13	0.11	50.07	0.07
CAN FER-1	0.52	3.29	1.39	(23.34)	(49.88)	0.41	(0.06)	0.02	0.3	0.22	0.03	2.39	0.26	16.95	0.03
CAN FER-3	0.09	0.84	1.2	(13.63)	(29.4)	(0.02)	(0.01)	0.03	1.02	0.08	0.03	0.07	(0.03)	53.61	0.01

Number	As	B	Ba	Be	Bi	Cl	Co	Cr	Cs	Cu	Ge	La	Li	Lu
CAN FER-4	(3.6)	(2)	(43)	(1)	.	(100)	(2)	9	(0.8)	13	(5)	(8)	7	.
CAN FER-1	(6)	.	1000	(1.5)	(6)	.	12	7	.	100	3	12	(5)	(0.02)
CAN FER-3	(1)	.	(11)	.	.	.	(2)	6	.	(6)	(4)	(2)	.	.

Number	Ni	Pb	Rb	Sb	Sc	Sm	Sr	V	Y	Yb	Zn	Zr
CAN FER-4	(6)	(8)	(16)	(3)	(1.5)	(2.2)	62	(11)	(8)	(0.5)	27	18
CAN FER-1	8	5200	.	(5)	(0.8)	(1.7)	90	(100)	.	(1)	3500	(13)
CAN FER-3	10	(9)	.	(1)	.	(0.6)	31	(8)	(6)	(0.2)	36	2

CRM IRON ORE, chart 1 of 5

analysis listed in mass % except * which is mg/kg 100 g units

Number	Fe	FeO	Al	Al_2O_3	C	Ca	CaO	MgO	Mn	MnO	P	S	Si	SiO_2	Ti	TiO_2
VS R21/2	99.0	.	.	.	0.02	.	.	.	0.3	.	0.01	0.02	0.06	.	.	.
VS R16/2	99.0	.	.	.	0.04	.	.	.	0.02	.	0.02	0.007	0.05	.	.	.
ECRM 685-1	91.103	.	0.3197	.	1.487	0.1395	.	.	0.0415	.	0.0170	0.0031	0.7950	.	0.2199	.
NCS DC28029	72.01	28.63	.	0.095	.	.	0.025	0.042	0.043	.	0.0013	0.0028	.	0.158	0.028	.
NCS DC16002	71.79	28.69	.	0.069	.	.	.	0.038	0.053	.	0.0022	0.055	.	0.36	.	.
JK 42	70.83	.	.	0.214	.	.	0.177	0.46	.	0.062	0.025	0.007	.	0.60	.	0.207 suspended
JK 47	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

continued

Number	As*	Co*	Cr*	Cu*	K	K_2O	Mg*	N*	Na	Na_2O	Ni*	O	Pb*	Sn*	V	V_2O_5	Zn*	Other
VS R21/2	.	.	.	.	.	.	.	.	.	.	.	0.3	.	.	.	.	.	Insoluble Residue: 0.20
VS R16/2	.	.	.	.	.	.	.	.	.	.	.	0.6	.	.	.	.	.	Insoluble Residue: 0.13
ECRM 685-1	.	133	.	.	0.0418	.	2394	.	0.0773	.	175	.	.	.	0.1436	.	.	Met.Fe: 80.799, FEII: (7.7)
NCS DC28029	1.2	8	62	7	.	0.0068	.	.	.	0.0008	22	.	2	.	.	.	26	
NCS DC16002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
JK 42	(2)	102	44	9.7	.	0.016	.	.	.	0.029	144	.	(1)	3.6	.	0.190	19	F:(100*), suspended Jan 2010
JK 47	.	.	.	.	.	.	.	67	.	.	.	1.09	.	.	.	.	.	

IRON ORE, chart 2 of 5

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = total

#	Number	Fe	FeO	FEII	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	NCS DC16001	69.29	27.70	.	.	0.081	.	.	.	.	.	0.16	0.037	.	.	.	0.0087	.	0.023	.	3.81	.	.
1	NCS DC13019c	68.96	28.98	.	.	0.174	.	0.196	.	0.0068	.	0.268	.	0.049	.	0.0060	0.010	.	0.0277	3.98	.	.	0.0174
1	IMZ 324	68.93	28.27	.	.	0.11	.	0.107	.	0.026	.	0.24	0.026	.	.	(0.04)	0.014	.	0.044	.	3.96	.	0.028
1	IMZ 323	68.35	27.65	.	.	0.23	.	0.109	.	0.027	.	0.28	0.043	.	.	0.035	0.018	.	0.052	.	4.31	.	0.017
1	NH 1124	67.90	0.45	.	.	0.54	.	0.15	0.01	.	.	0.04	.	0.20	0.009	.	.	0.09	.	.	0.63	.	.
2	DH 1112	67.83	0.41	.	.	0.704	.	0.007	.	.	.	0.018	0.101	.	.	.	.	0.106	.	.	0.597	.	0.046
1	VS R1/3	67.8	26.8	.	.	0.24	.	0.130	.	.	.	0.29	.	.	.	.	0.0131	.	0.027	.	5.22	.	.
1	IMZ 320	67.76	27.37	.	.	0.12	.	0.13	.	0.049	.	0.30	0.029	.	.	0.037	0.022	.	0.012	.	5.30	.	0.016
1	IMZ 325	67.73	28.03	.	.	0.20	.	0.17	.	0.027	.	0.27	0.031	.	.	(0.03)	0.016	.	0.077	.	5.01	.	0.018
1	IMZ 261/1	67.54	.	.	.	0.59	.	0.30	.	.	.	1.37	.	0.16	.	.	(0.019)	.	0.080	.	3.16	.	.
1	VS R25/1	67.3	.	.	.	.	.	0.14	.	.	.	0.25	.	.	.	.	.	.	.	.	3.37	.	.
1	VS R22/2	67.0	.	.	.	0.3	.	0.1	.	.	.	0.2	.	.	.	.	0.008	.	.	.	3.3	.	.
1	JSS 804-2	66.93	.	(0.29)	0.51	.	0.0490	.	.	.	0.0099	.	0.016	.	.	.	0.050	.	0.0132	1.17	.	0.023	.
1	SRM 690	66.85	.	.	.	0.18	.	0.20	.	0.0030	.	0.18	.	0.23	.	0.003	0.011	.	0.003	.	3.71	.	0.022
1	NCS DC13020a	66.71	28.68	.	.	0.0768	.	0.185	.	0.0084	.	0.381	.	0.0392	.	0.0035	0.0115	.	0.0179	7.01	.	.	0.0124
1	SARM 12	66.63	.	.	0.41	.	0.78	.	0.0108	.	1.69	.	0.17	.	0.0091	.	0.0477	.	0.0695	0.16	.	0.43	.
1	NH 1125	66.57	0.48	.	.	0.76	.	.	0.01	.	.	0.06	.	0.06	.	.	.	0.07	.	.	2.87	.	.
1	NCS DC28028	66.47	0.58	.	.	1.36	.	0.028	.	0.014	.	0.091	0.137	.	.	0.005	0.055	.	0.0066	.	1.79	0.046	.
1	NCS DC28027	66.34	0.07	.	.	1.42	.	0.02	.	0.013	.	0.063	0.48	.	.	0.0055	0.034	.	0.0071	.	1.02	0.057	.
2	DH 1113	66.33	0.04	.	.	1.11	.	0.030	.	0.010	.	0.040	0.432	.	.	<0.003	.	0.084	0.002	.	1.80	.	0.046
1	ECRM 517	66.30	.	.	0.508	.	0.033	.	0.0105	.	0.0311	.	0.679	.	0.0097	.	0.0408	.	0.0090	0.519	.	0.0332	.
1	ASCRM 007	66.19	.	.	0.173	.	0.014	.	0.065	.	0.015	.	<0.005	.	0.0085	.	0.0045	.	0.0054	2.25	.	0.031	.
1	SARM 11	66.16	.	.	0.73	.	0.0323	.	0.12	.	0.0124	.	0.0113	.	0.0113	.	0.0419	.	0.0118	1.45	.	0.0382	.
2	DH 1137	66.15	0.32	.	.	0.442	.	1.930	.	0.011	.	0.164	0.038	.	.	0.020	.	0.113	0.003	.	2.365	.	0.032
1	ECRM 682-2	66.12	.	.	0.325	.	.	.	.	.	0.0133	.	0.0311	.	.	.	0.0529	.	0.0140	0.833	.	0.0441	.
1	CAN MW-1	66.08	.	.	0.2	.	0.038	.	0.011	.	0.020	.	(0.016)	.	(0.011)	.	0.011	.	(0.011)	2.1	.	(0.08)	.
2	DH 1126	65.88	8.07	.	.	0.151	.	0.424	.	0.001	.	0.306	0.095	.	.	0.001	.	0.011	0.004	.	4.64	.	0.046
1	JK 28	65.86	2.4	.	0.35	.	0.21	.	0.99	.	0.18	.	0.045	.	0.078	.	0.045	.	0.004	1.96	.	0.11	.
1	GBW 07218	65.75	.	.	.	1.08	.	0.042	.	.	.	0.045	.	0.028	.	.	0.047	.	0.018	.	2.65	.	.
2	DH 1136	65.74	.	.	.	0.345	.	0.370	.	0.033	.	0.083	1.21	.	.	0.025	.	0.017	0.002	.	3.35	.	0.023
1	ECRM 604-1	65.69	.	.	0.93	.	0.107	.	.	.	0.049	.	0.092	.	.	.	0.053	.	0.015	1.27	.	0.060	.
1	JSS 850-4	65.67	(0.30)	.	.	0.40	.	0.41	.	0.075	.	0.79	0.019	.	.	0.129	0.013	.	0.006	.	4.12	.	0.056
1	BAM 630-1	65.63	.	.	.	0.88	.	0.10	.	.	.	0.47	0.060	.	.	.	0.043	.	0.032	.	5.88	.	0.066
2	DH 1114	65.55	27.20	.	.	0.271	.	0.421	.	0.061	.	0.565	0.029	.	.	0.078	.	0.028	0.019	.	7.47	.	0.060
2	DH 1128	65.52	0.144	.	.	1.23	.	2.08	.	0.024	.	0.110	0.044	.	.	0.011	.	0.094	0.004	.	2.55	.	0.043
1	IMZ 322	65.50	26.82	.	.	0.095	.	0.26	.	0.058	.	0.46	0.026	.	.	0.069	0.015	.	0.047	.	7.56	.	0.012
1	IPT 146	65.49	(0.172)	.	1.27	.	.	0.012	.	0.038	.	0.021	0.118	.	.	0.006	0.032	.	0.006	.	3.65	.	0.074
2	DH 1124	65.47	0.109	.	.	1.26	.	2.05	.	0.031	.	0.135	0.034	.	.	0.014	.	0.081	0.004	.	2.54	.	0.045
1	NH 1126	65.40	1.45	.	.	1.01	.	0.88	0.04	.	.	0.26	.	0.08	0.02	.	.	.	.	.	2.85	.	.
1	IMZ 310	65.25	1.61	.	.	1.02	.	0.30	.	0.022	.	0.25	0.058	.	.	0.054	0.034	.	0.011	.	6.58	.	0.035
2	DH 1132	65.21	0.59	.	.	0.811	.	0.023	.	0.005	.	0.025	0.072	.	.	0.001	.	0.052	0.003	.	5.00	.	0.053
1	SRM 693	65.11	.	.	.	1.04	.	0.016	.	0.0028	.	0.013	.	0.091	.	0.0028	0.056	.	0.005	.	3.87	.	0.035

Number Fe FeO FEII Al Al_2O_3 Ca CaO K K_2O Mg MgO Mn MnO Na Na_2O P P_2O_5 S Si SiO_2 Ti TiO_2

continued DH samples list water loss as LOI CAN MW-1: 200g JK 28, VS R22, VS R25: 150g all others: 100g

Number	As	Ba	C	CO_2	Co	Cr	Cr_2O_3	Cu	Ni	Pb	V	V_2O_5	Zn	LOI	Other
NCS DC16001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
NCS DC13019c	.	.	.	.	.	.	.	.	.	0.0052	.	.	0.0030	.	
IMZ 324	.	0.0024	0.052	.	0.003	0.0025	.	0.0014	0.0013	0.0002	.	.	(0.003)	2.91	
IMZ 323	.	0.0020	0.027	.	0.0026	0.0020	.	0.0007	0.0002	0.0015	(0.002)	.	0.0021	2.49	
NH 1124	.	.	0.19	.	.	0.014	.	.	.	.	.	.	.	.	
DH 1112	.	.	0.038T	0.022	.	.	.	.	.	.	.	.	.	1.270	
VS R1/3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
IMZ 320	0.0015	0.0019	0.033	.	(0.003)	0.003	.	0.0015	(0.0013)	0.0015	0.0015	.	0.002	2.87	
IMZ 325	.	0.0021	0.094	.	0.002	0.0023	.	0.0010	.	0.0017	0.0018	.	(0.003)	2.53	
IMZ 261/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
VS R25/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
VS R22/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
JSS 804-2	0.0019	.	.	.	.	0.0244	.	.	0.0028	.	0.0031	.	.	.	
SRM 690	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
NCS DC13020a	.	.	.	.	.	.	.	.	.	0.006	.	.	0.0024	.	
SARM 12	.	.	.	.	.	.	.	0.0502	0.0281	.	.	.	.	.	
NH 1125	.	.	0.07	.	.	0.020	.	.	.	.	.	.	.	.	
NCS DC28028	0.0012	.	.	.	0.0008	0.003	.	0.0014	0.0019	0.0013	.	.	0.0044	.	
NCS DC28027	0.0004	.	.	.	0.0009	0.0015	.	0.0085	0.0008	0.0013	.	.	0.0032	.	
DH 1113	.	.	0.035	.	.	.	0.010	.	.	.	.	0.007	.	1.244	
ECRM 517	.	.	0.061	.	.	.	.	0.0088	.	0.0028	0.0040	.	0.0047	1.898	
ASCRM 007	0.0005	.	.	.	(0.0004)	(0.0011)	.	(0.0030)	(0.0010)	(0.0015)	0.0013	.	(0.0039)	0.168	
SARM 11	.	.	.	.	.	.	.	0.0011	0.0030	.	.	.	.	.	
DH 1137	.	.	0.101	0.089	.	.	0.017	.	.	.	.	.	.	0.080	
ECRM 682-2	.	.	.	.	.	.	.	0.0005	.	0.0004	0.0015	.	.	.	
CAN MW-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
DH 1126	.	.	0.280T	0.97	.	.	.	.	.	.	.	.	.	0.098	
JK 28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Fe_2O_3: 91.5
GBW 07218	.	.	.	.	.	.	.	0.003	.	.	.	.	.	.	
DH 1136	.	.	0.016	0.030	.	.	0.025	.	.	.	.	0.006	.	0.057	ZnO: 0.003
ECRM 604-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
JSS 850-4	.	.	.	.	.	(0.003)	.	0.008	(0.006)	.	0.025	.	(0.007)	.	
BAM 630-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
DH 1114	.	.	0.125	.	.	.	0.006	.	.	.	.	0.002	.	.	
DH 1128	.	.	0.030T	0.075	.	.	.	.	.	.	.	0.005	.	0.059	
IMZ 322	.	0.0013	0.047	.	0.0008	0.0019	.	.	0.0014	0.0011	0.0002	.	0.0029	2.25	
IPT 146	.	0.0075	0.04	.	(0.0009)	0.0061	.	0.0037	0.0016	(0.0029)	0.0059	.	0.0032	1.08	
DH 1124	.	.	0.068T	0.098	.	.	0.003	.	.	.	.	.	.	0.079	
NH 1126	.	.	0.13	.	.	.	.	.	.	.	.	.	0.003	.	
IMZ 310	0.005	0.003	0.158	.	0.003	0.005	.	0.0011	0.002	0.0013	0.0015	.	0.0019	-1.20	Cl: 0.07
DH 1132	.	.	0.033T	0.005	.	.	0.017	0.002 CuO		.	.	0.008	.	0.628	NiO: 0.028
SRM 693	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Number As Ba C CO_2 Co Cr Cr_2O_3 Cu Ni Pb V V_2O_5 Zn LOI Other

IRON ORE, chart 3 of 5

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = total

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	IMZ 321	64.94	25.94	.	0.20	.	0.15	.	0.029	.	0.44	0.017	.	0.015	.	0.026	.	8.33	.	0.016
1	NCS DC11012	64.89	25.63	.	1.18	.	1.36	.	0.154	.	1.72	.	0.119	0.0064	.	0.409	.	3.51	.	0.084
1	NCS DC14001a	64.88	0.37	.	1.59	.	0.080	.	0.085	.	0.044	0.056	.	0.055	.	0.015	.	3.48	0.044	.
2	DH 1118	64.72	.	.	1.785	.	0.052	.	0.020	.	0.057	0.713	.	.	0.141	0.009	.	1.56	.	0.075
2	DH 1135	64.69	0.06	.	1.49	.	0.011	.	0.016	.	0.033	1.520	.	.	0.140	0.006	.	0.696	.	0.052
2	DH 1116	64.69	.	.	0.722	.	1.149	.	0.023	.	0.400	0.198	.	.	0.058	.	.	4.67	.	0.078
1	NCS DC14028a	64.36	25.93	.	1.23	.	0.86	.	(0.08)	.	1.61	0.160	.	0.016	.	0.368	.	3.12	0.59	.
2	DH 1108	64.05	2.30	.	1.207	.	0.007	.	0.005	.	0.017	0.077	.	.	0.138	0.008	.	4.60	.	0.043
2	DH 1125	64.05	0.193	.	1.20	.	2.53	.	0.033	.	0.421	0.068	.	.	0.087	0.010	.	2.52	.	0.045
1	NM 613C	64.03T	.	.	3.11	.	0.24	.	.	.	0.35	0.025	.	0.023	.	0.013	3.63	.	.	.
1	VS R15/2	64.0	28.0	.	.	.	0.9	.	.	.	.	.	.	.	.	.	.	2.3	.	.
1	NH 1122	63.72	26.21	.	0.19	.	0.36	.	.	.	0.51	.	0.04	.	0.038	0.052	.	9.14	.	.
1	KZ 181-89	63.18T	.	.	1.18	.	2.19	.	0.10	.	0.74	.	.	0.035	.	4.16T	.	6.11	.	0.070
2	DH 1115	63.17	.	.	2.68	.	0.494	.	0.008	.	0.244	0.074	.	.	0.101	.	.	5.79	.	0.128
1	IMZ 330	63.09	1.19	.	0.13	.	1.04	.	0.18	.	0.23	0.012	.	0.013	.	0.003	.	8.26	.	0.01
1	IMZ 331	63.05	1.55	.	0.24	.	3.78	.	0.092	.	0.21	0.028	.	0.015	.	0.107	.	5.11	.	0.017
1	VS 5403-90	62.74	25.74	.	0.73	.	0.89	.	.	.	0.65	0.162	.	.	.	3.89	.	7.14	.	0.055
1	NCS DC28026	62.27	0.59	.	2.39	.	0.144	.	0.023	.	0.156	0.17	.	0.078	.	0.02	.	4.2	0.055	.
1	IRSID 611-1	62.22	.	0.69	.	2.85	.	.	.	0.32	.	1.97	.	0.030	.	(0.008)	2.07	.	0.033	.
1	USZ 27-99	62.20	21.06	.	1.37	.	0.56	.	0.07	.	2.78	.	0.105	.	(0.016)	.	.	3.37	.	0.101
1	NCS DC28025	62.11	0.58	.	2.06	.	0.021	.	0.023	.	0.101	0.65	.	0.067	.	0.013	.	2.92	0.051	.
1	IMZ 332	62.10	1.61	.	0.32	.	0.39	.	0.117	.	0.71	0.026	.	0.010	.	0.003	.	9.63	.	0.027
1	IMZ 333	61.87	1.65	.	0.33	.	0.34	.	0.11	.	0.73	0.034	.	0.008	.	0.001	.	10.07	.	0.026
1	JSS 801-6	61.75	(1.0 FeII)	1.09	.	(0.014)	.	.	.	(0.032)	.	0.707	.	0.060	.	0.0093	1.95	.	0.051	.
1	NCS DC14033	61.73	1.51	.	0.48	.	0.11	.	0.056	.	0.055	0.027	.	0.024	.	0.036	.	9.82	0.041	.
1	NCS DC28024	61.53	0.24	.	2.12	.	0.118	.	0.026	.	0.109	0.276	.	0.068	.	0.038	.	3.43	0.052	.
1	BAM 631-1	61.09	.	.	1.06	.	0.75	.	(0.04)	.	0.54	0.044	.	0.114	.	0.033	.	3.20	.	0.109
1	ECRM 678-1	60.75	.	0.276	.	3.93	.	0.111	.	0.573	.	0.075	.	1.608	.	0.021	1.727	.	0.127	.
1	CAN SCH-1	60.73	.	0.509	.	0.029	.	0.027	.	0.020	.	0.777	.	0.054	.	0.007	3.78	.	0.031	.
1	NH 1123	60.50	1.60	.	0.39	.	0.31	0.10	.	.	0.87	.	0.04	.	0.038	.	.	11.51	.	.
1	ECRM 680-1	59.976	.	0.659	.	0.450	.	0.0781	.	0.137	.	0.0249	.	0.0175	.	0.5440	4.205	.	0.0447	.
1	IMZ 262/1	59.73	.	.	0.71	.	0.42	.	.	.	0.83	(0.04)	0.044	(0.016)	.	(0.005)	.	12.28	.	.
1	IRSID 606-1	59.66	.	0.34	.	1.04	.	.	.	0.32	.	2.59	.	0.026	.	0.033	1.04	.	0.019	.
1	SRM 692	59.58	.	.	1.41	.	0.023	.	0.039	.	0.035	.	0.46	0.039	.	0.005	.	10.14	.	0.045
1	KZ 184-89	59.44T	20.34	.	1.01	.	1.35	.	0.16	.	0.22	0.36T	.	0.031	.	1.08T	.	7.99	.	0.052
2	BS 103	59.41	.	.	0.96	.	1.27	.	(0.07)	.	0.34	.	0.61	.	0.133	0.065	.	8.12	.	0.04
1	IMZ 311	58.65	0.78	.	1.03	.	0.048	.	0.065	.	0.06	0.018	.	0.048	.	0.015	.	13.58	.	0.039
1	IMZ 312	57.69	(0.72)	.	1.00	.	0.057	.	0.032	.	0.21	0.025	.	0.027	.	0.011	.	14.67	.	0.039
1	JSS 820-3	56.81	.	1.45	.	0.269	.	86*	.	0.127	.	0.069	.	0.0404	.	0.0141	2.76	.	0.090	.
1	JSS 831-2	56.64T	.	.	.	.	.	.	.	.	.	0.501	.	0.153	.	0.0049	.	.	.	.
1	IMZ 313	55.85	0.68	.	1.13	.	0.079	.	0.030	.	0.31	0.03	.	0.031	.	0.0085	.	17.29	.	0.044

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2

continued CAN SCH-1: 20 g NCS DC62001: 2 g NCS DC11012: 6 g JSS 820-3: 70g VS 5403-90: 50g others: 100 g

Number	As*	Ba	C	CO_2	Cl	Co	Cr	Cr_2O_3	Cu	Na	Na_2O	Ni	Pb	V	V_2O_5	Zn	ZnO	LOI	Other
IMZ 321	.	0.0019	0.18	.	0.083	0.0009	(0.002)	.	.	.	0.077	0.0024	.	0.0005	.	(0.003)	.	1.99	
NCS DC11012	06	.	.	.	.	.	.	.	0.008	.	0.064	.	0.0008	.	.	0.013	.	.	
NCS DC14001a	.	.	.	.	.	.	.	.	.	.	0.012	.	.	.	.	.	.	.	
DH 1118	.	.	0.085	0.033	.	.	.	.	.	.	0.014	.	.	.	0.017	.	0.005	2.51	
DH 1135	.	.	0.069	0.007	.	.	.	.	.	.	.	.	.	.	.	.	.	2.31	
DH 1116	.	.	0.016	0.026	.	.	.	0.038	.	.	0.016	.	.	.	0.009	.	0.0010	0.059	NiO:0.011
NCS DC14028a	.	.	.	.	.	.	.	.	0.0025	.	(0.09)	.	.	.	.	.	.	.	
DH 1108	.	.	0.046T	.	.	.	.	.	.	.	0.003	.	.	.	.	.	.	.	U: 0.5*
DH 1125	.	.	0.671T	0.929	.	.	.	0.002	.	.	0.016	.	.	.	0.008	.	.	.	
NM 613C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
VS R15/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.6	.	.	.	
NH 1122	.	.	0.50	.	.	.	0.015	.	.	0.07	.	.	.	.	.	0.023	.	.	
KZ 181-89	.	.	.	.	.	0.0080	.	.	0.046	.	0.20	.	.	.	.	.	.	.	
DH 1115	.	.	.	.	.	.	.	0.005	.	.	0.020	.	.	.	0.010	.	.	.	
IMZ 330	.	(0.003)	0.016	.	.	.	0.003	.	0.0017	.	0.073	(0.002)	0.0016	.	.	0.002	.	-0.04	
IMZ 331	(4)	0.0025	.	.	.	0.001	0.0051	.	0.0016	.	0.037	0.002	0.002	0.003	.	0.003	.	0.22	Sn: 0.0011
VS 5403-90	.	.	.	0.39	.	.	.	.	0.32	.	.	.	.	.	.	0.029	.	.	Ag: 5.9*
NCS DC28026	13	.	.	.	.	0.001	0.0027	.	0.0015	.	0.024	0.0024	0.0004	.	.	0.0026	.	.	
IRSID 611-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
USZ 27-99	.	.	.	.	.	0.013	.	.	0.030	.	(0.04)	0.008	.	.	.	(0.013)	,	(1.46)	SO_3: 7.14
NCS DC28025	11	.	.	.	.	0.0015	0.0038	.	0.0018	.	0.013	0.0033	0.0008	.	.	0.0026	.	.	
IMZ 332	.	0.0036	0.012	.	.	.	0.005	.	0.0021	.	0.050	0.002	0.0016	(0.001)	.	0.0023	.	0.11	
IMZ 333	.	0.003	0.011	.	.	.	0.006	.	0.002	.	0.057	0.002	0.0015	0.001	.	0.0014	.	0.13	
JSS 801-6	.	.	.	.	.	.	(0.005)	.	(0.002)	.	.	0.0033	.	(0.003)	.	.	.	.	
NCS DC14033	.	.	.	.	.	0.0048	.	.	0.061	.	0.0056	0.0023	.	.	.	.	.	.	
NCS DC28024	11	.	.	.	.	0.0009	0.0054	.	0.0014	.	0.034	0.0027	0.0008	.	.	0.002	.	.	
BAM 631-1	.	.	.	.	.	.	.	.	.	.	(0.04)	.	.	.	.	.	.	.	
ECRM 678-1	.	.	.	.	.	.	.	.	.	0.107	.	.	.	0.115	.	.	.	.	F: 0.289
CAN SCH-1	.	.	.	.	.	.	.	.	.	0.019	.	.	.	.	.	.	.	.	
NH 1123	.	.	.	.	.	.	0.008	.	.	0.04	.	.	.	.	.	.	.	.	
ECRM 680-1	571	.	.	.	.	.	.	.	.	0.1283	.	.	0.3166	.	.	.	.	.	
IMZ 262/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
IRSID 606-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
SRM 692	.	.	.	.	.	.	.	.	.	.	0.008	.	.	.	.	.	.	.	
KZ 184-89	.	.	.	4.14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
BS 103	.	.	.	.	.	.	.	.	.	.	(0.05)	.	.	.	.	.	.	.	
IMZ 311	6	0.004	0.015	.	0.25	(0.0006)	0.004	.	0.0012	.	0.23	0.003	0.0014	0.0014	.	0.0017	.	-0.98	
IMZ 312	(7)	0.0022	0.024	.	0.31	0.0003	0.006	.	0.0014	.	0.27	0.0022	0.0011	0.0019	.	0.0022	.	-1.20	
JSS 820-3	.	.	.	.	.	.	(0.004)	.	(0.001)	0.0158	.	0.0027	(0.001)	0.0039	.	0.0082	.	7.93	
JSS 831-2	.	.	.	.	.	.	0.028	.	0.0068	.	.	0.0077	.	.	.	.	3	(0.11)	
IMZ 313	(8)	0.0017	0.031	.	(0.29)	0.0002	0.0067	.	0.0015	.	0.23	0.0024	0.0009	(0.001)	.	0.0028	.	-1.31	

Number	As*	Ba	C	CO_2	Cl	Co	Cr	Cr_2O_3	Cu	Na	Na_2O	Ni	Pb	V	V_2O_5	Zn	ZnO	LOI	Other

CRM IRON ORE, chart 4 of 5

analysis listed in mass % except * which is mg/kg T = Total

Number	Fe	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
VS R5/6	55.8	.	2.57	.	9.30	.	.	.	1.95	.	0.86	.	.	0.029	0.035	.	5.71	.	0.29
VS 5405-90	54.83	.	2.04	.	.	.	0.33		0.29	0.62	.	.	.	0.034	0.018	.	16.23	.	0.092
VS R2/4	53.7	.	.	.	.	.	.	.	.	.	.	.	.	0.0183	0.0089	.	21.7	.	.
IRSID 603-1	53.65	4.20	.	(0.91)	.	.	.	(0.2)	.	0.440	.	.	.	0.084	0.097	1.28	.	0.137	.
VS R19/2	52.4	.	1.61	.	2.6	.	.	.	0.68	.	0.64	.	.	0.031	0.32	.	16.3	.	.
NH 1127	52.12	.	1.71	.	2.44	0.38	.	.	7.62	.	4.27	0.03	.	.	.	.	7.07	.	.
IMZ 263/1	52.10	.	1.14	.	0.17	.	.	.	0.17	(0.04)	0.045	.	.	(0.026)	0.036	.	22.78	.	.
NH 1121	51.55	.	2.60	.	0.17	0.16	.	.	0.24	.	0.045	0.11	.	0.13 P2O5	.	.	20.83	.	.
ECRM 677-1	51.54	0.32	.	0.038	.	0.008	.	0.012	.	0.016	.	0.007	.	0.0170	(0.005)	11.78	.	0.013	.
ECRM 610-1	47.46	1.96	.	.	.	.	.	1.86	.	0.581	.	.	.	0.007	0.189	3.16	.	0.015	.
IMZ 264/1	44.25	.	1.14	.	0.23	.	.	.	0.22	(0.04)	0.043	.	.	0.025	0.055	.	33.56	.	.
VS R7/4	43.4	.	4.75	.	1.55	.	0.354	.	0.75	.	2.46	.	0.117	1.13	0.133	.	13.75	.	0.192
NCS DC11010	42.59	.	2.29	.	11.21	.	0.191	.	3.74	.	0.197	.	0.161	0.026	1.56	.	16.73	.	0.113
IRSID 612-1	42.4	3.00	.	12.06	.	.	.	1.20	.	0.363	.	.	.	0.885	0.053	5.94	.	0.151	.
KZ 182-89	38.63T	.	1.04	.	0.14	.	0.11	.	.	0.044T	.	.	.	0.065	.	.	42.64	.	0.144
VS R8/3	38.2	.	10.35	.	0.89	.	.	.	2.17	.	0.432	.	.	0.165	0.031	.	16.57	.	0.85
VS 5407-90	38.15	.	2.62	.	5.78	.	0.51	.	0.23	10.42	.	.	0.15	.	0.024	.	12.46	.	0.083
IMZ 265/1	37.74	.	3.10	.	1.50	.	.	.	0.53	0.056	.	.	.	0.039	0.047	.	37.02	.	.
IRSID 601-1	36.76	2.33	.	4.05	.	.	.	1.21	.	0.370	.	.	.	0.590	0.065	8.95	.	0.114	.
BAM 629-1	36.21	.	4.07	.	5.63	.	.	.	1.64	0.390	.	.	.	0.696	0.063	.	19.25	.	0.216
KZ 183-89	35.16T	.	1.66	.	.	.	0.35	.	.	0.046T	.	.	.	0.019	0.70T	.	41.56	.	0.073
VS R20/2	34.7	.	0.64	.	2.44	.	.	.	3.34	.	.	.	.	.	.	.	38.0	.	.
JK 30	34.67	.	3.30	.	3.39	.	0.78	.	3.72	.	0.14	.	0.24	0.019	0.028	.	38.58	.	0.11
NCS DC11013	34.07	.	0.74	.	0.99	.	0.165	.	2.86	.	0.093	.	0.065	0.054	0.118	.	48.27	.	0.043
VS R24/1	33.96	.	.	.	2.25	.	.	.	8.28	.	.	.	.	.	.	.	4.94	.	.
ECRM 681-1	33.21	5.62	.	2.80	.	0.49	.	0.89	.	0.22	.	0.068	.	0.88	0.103	8.32	.	0.29	.
VS P9/2	33.01	.	0.64	.	2.55	.	.	.	10.9	.	.	.	.	0.0056	0.205	.	2.29	.	.
CMSI 1704	32.97	.	8.26	.	6.38	.	.	.	6.16	.	0.288	.	.	0.0100	0.687	.	20.33	.	10.63
NCS DC62001b	46.93	Fe_2O_3	6.10	.	1.64	.	2.98	.	0.82	.	.	.	0.14	.	.	.	35.32	.	0.37
BAM 627-2	31.77	.	4.49	.	15.67	.	.	.	1.57	0.250	.	.	.	0.661	0.114	.	9.24	.	0.225
IRSID 607-1	30.89	2.48	.	13.74	.	.	.	0.77	.	0.254	.	.	.	0.529	0.050	3.07	.	0.123	.
IRSID 609-1	30.52	2.26	.	6.87	.	.	.	2.00	.	0.472	.	.	.	0.608	1.000	7.83	.	0.118	.
IMZ 266/1	29.04	.	3.13	.	3.42	.	.	.	0.95	.	0.078	.	.	0.030	0.10	.	44.94	.	.
CMSI 1705	27.45	.	10.29	.	7.50	.	.	.	6.17	.	0.264	.	.	0.0119	0.566	.	25.47	.	9.72
ECRM 679-1	24.20	1.99	.	18.07	.	0.157	.	0.70	.	0.295	.	0.054	.	0.557	0.099	3.43	.	0.106	.
ECRM 651-1	23.85	2.25	.	16.15	.	0.27	.	1.04	.	0.97	.	0.05	.	0.35	0.40	3.46	.	0.10	.
IMZ 267/1	19.75	.	4.05	.	4.73	.	.	.	1.22	(0.16)	0.16	.	.	0.030	0.17	.	53.72	.	.
CMSI 1708	13.23	.	11.47	.	11.62	.	.	.	8.32	.	0.242	.	.	0.0115	0.446	.	36.33	.	10.74

Number | Fe | Al | Al_2O_3 | Ca | CaO | K | K_2O | Mg | MgO | Mn | MnO | Na | Na_2O | P | S | Si | SiO_2 | Ti | TiO_2

continued

Number	As	C	CO_2	Co	Cr	Cu	FeO	Ga	Ge*	Ni	Pb	V	V_2O_5	Zn	Units	Other
VS R5/6	.	.	.	.	.	.	9.81	.	.	.	.	.	.	.	150 g	
VS 5405-90	.	.	.	.	.	.	.	.	5.1	.	0.23	.	.	0.089	50 g	
VS R2/4	.	.	.	.	.	.	0.69	.	.	.	.	.	.	.	100 g	Insoluble Residue: 22.0
IRSID 603-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
VS R19/2	0.017	.	.	.	.	.	6.71	.	.	.	.	.	.	.	125 g	
NH 1127	.	0.43	.	.	0.022	.	10.10	.	.	.	0.011	.	.	0.011	100 g	
IMZ 263/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NH 1121	.	.	.	.	0.016	.	0.70	.	.	.	.	.	.	0.017	100 g	
ECRM 677-1	.	.	.	.	.	.	.	.	.	(0.0015)	.	.	.	.	100 g	
ECRM 610-1	.	.	.	0.075	1.84	.	.	.	.	1.48	.	.	.	.	100 g	
IMZ 264/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
VS R7/4	0.121	.	.	.	.	.	.	.	.	.	0.011	.	0.125	0.032	75 g	BaO: 0.142
NCS DC11010	0.0026	.	.	.	.	0.023	15.6	.	.	.	0.0023	.	.	0.019	60 g	
IRSID 612-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
KZ 182-89	.	.	.	.	.	.	1.61	.	.	.	.	.	.	.	100 g	
VS R8/3	.	.	.	(0.06)	.	.	.	.	NiO:0.67		.	.	.	.	75 g	Cr_2O_3: 2.53
VS 5407-90	.	.	4.16	.	.	.	.	.	21.9	.	0.15	.	.	0.20	50 g	Ba: 0.74
IMZ 265/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IRSID 601-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
BAM 629-1	0.023	.	.	.	0.016	.	.	.	.	.	.	.	.	.	100 g	
KZ 183-89	.	.	.	.	.	.	1.32	.	36.6	.	0.026	.	.	.	100 g	Ba: 3.10
VS R20/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	Metallic Iron: 27.6
JK 30	.	.	.	.	.	0.014	11.89	.	.	.	.	.	<0.01	.	150 g	Fe_2O_3: 36.33 LOI: 1.42 P_2O_5: 0.042
NCS DC11013	0.0003	.	.	.	.	0.0031	20.15	.	.	.	0.028	.	.	0.0045	60 g	
VS R24/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	125 g	
ECRM 681-1	.	.	.	.	.	.	.	.	.	.	.	0.077	.	.	100 g	F: 0.19
VS P9/2	.	.	10.6	.	.	.	40.0	.	.	.	.	.	.	.	125 g	
CMSI 1704	.	.	.	0.018	0.0067	0.020	.	0.0032	.	0.0094	.	.	0.313	.	100 g	
NCS DC62001b	.	.	.	.	.	.	.	.	.	.	.	.	.	.	20 g	SO_3: 0.04 LOI: 4.43
BAM 627-2	0.020	.	.	.	0.018	.	.	.	.	.	.	.	.	.	100 g	
IRSID 607-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IRSID 609-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMZ 266/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
CMSI 1705	.	.	.	0.016	0.0099	0.015	.	0.0029	.	0.0083	.	.	0.258	.	100 g	
ECRM 679-1	.	.	.	.	0.012	.	.	.	.	.	.	.	.	0.021	100 g	
ECRM 651-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMZ 267/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
CMSI 1708	.	.	.	0.0098	0.0033	0.0065	.	0.0016	.	0.0048	.	.	0.059	.	100 g	

Number | As | C | CO_2 | Co | Cr | Cu | FeO | Ga | Ge* | Ni | Pb | V | V_2O_5 | Zn | Units | Other

CRM COARSE AND RAW IRON ORE, chart 5 of 5

Number	Fe	Al_2O_3	P	SiO_2	TiO_2	LOI	Units
GIOP-24	64.37	0.7	0.066	2.69	0.05	1.9	10 g powder
GIOP-19	63.50	1.7	0.064	3.44	0.06	3.6	10 g powder
GIOP-25	61.46	3.6	0.023	5.28	0.13	2.7	10 g powder
GIOP-14	61.36	3.6	0.039	5.27	0.07	2.4	10 g powder
GIOC-6	61.26	2.2	0.068	3.10	0.07	6.5	2 kg of raw, coarse material
GIOP-23	61.36	3.6	0.039	5.24	0.07	2.4	10 g powder
GIOP-18	60.64	2.4	0.056	4.74	0.04	5.5	10 g powder
GIOC-3	60.57	2.5	0.053	3.42	0.14	6.9	2 kg of raw, coarse material
GIOP-22	59.20	2.3	0.050	4.54	0.11	7.4	10 g powder
GIOP-17	58.48	3.3	0.060	6.13	0.06	6.2	10 g powder
GIOP-26	57.59	0.8	0.103	8.55	0.04	2.7	10 g powder
GIOC-4	57.26	4.1	0.055	5.57	0.23	7.7	2 kg of raw, coarse material
GIOC-5	54.77	5.5	0.057	6.96	0.32	8.4	2 kg of raw, coarse material
GIOP-21	53.60	4.9	0.041	7.61	0.26	8.8	10 g powder
GIOP-15	50.68	4.1	0.032	20.10	0.04	1.3	10 g powder
GIOP-20	47.80	4.9	0.031	15.22	0.43	9.2	10 g powder
GIOP-27	45.67	9.4	0.188	18.00	0.39	2.8	10 g powder
GIOP-31	37.37	0.5	0.047	27.33	0.03	6.9	10 g powder
GIOP-7	33.11	0.7	0.099	44.80	0.04	2.7	10 g powder
GIOP-32	30.22	0.7	0.105	50.00	0.03	1.0	10 g powder
GIOP-16	19.38	29.1	0.017	29.59	1.08	11.9	10 g powder

IRON ORE SINTER

= class, where 1 = CRM and 2 = RM analysis listed in mass % powder 100 g

#	Number	Fe	FeO	Al	Al_2O_3	C	CO_2	Ca	CaO	Cr_2O_3	Cu	CuO	F	K	K_2O	Mg	MgO	LOI 900'C
2	DH 5601	60.48	10.32	.	0.704	0.023	0.051	.	6.50	0.022	.	0.003	.	.	0.046	.	1.75	0.082
2	DH 5622	58.57	9.63	.	1.43	0.057	0.075	.	7.37	0.010	.	.	.	.	0.058	.	1.22	0.134
2	DH 5620	58.04	7.64	.	1.41	0.033	0.041	.	8.19	0.027	.	.	.	.	0.043	.	1.54	0.098
2	DH 5614	57.82	5.21	.	1.31	0.064	0.173	.	8.80	0.010	.	.	.	.	0.056	.	1.08	0.122
2	DH 5628	57.78	7.21	.	1.47	.	.	.	9.39	0.039	.	.	.	.	0.051	.	0.90	.
2	DH 5623	57.37	6.56	.	1.16	0.049	0.062	.	8.77	0.037	.	.	.	.	0.042	.	1.66	0.131
2	DH 5619	57.33	.	.	1.38	0.037	0.043	.	8.78	0.031	.	.	.	.	0.042	.	1.72	0.090
2	DH 5616	57.29	6.58	.	1.33	.	.	.	9.51	0.045	.	.	.	.	0.045	.	1.49	.
2	DH 5603	56.28	.	.	1.33	0.059	.	.	8.73	0.032	.	.	.	.	0.075	.	2.40	.
2	DH 5613	56.18	7.51	.	1.88	.	0.105	.	10.11	0.018	.	.	.	.	0.104	.	0.99	0.154
1	ECRM 683-1	56.06	.	1.30	.	.	.	5.70	.	Cr:0.018 (0.0022)		.	0.020	0.148	.	1.04	.	.
2	BS 104	55.04	.	.	1.26	.	.	.	8.83	.	.	.	.	.	.	.	3.45	.
2	BS 104A	54.6	.	.	1.04	.	.	.	10.4	.	.	.	.	0.12	.	.	1.3	.
2	DH 5604	54.41	7.43	.	1.163	0.128	0.305	.	11.28	0.023	.	.	.	.	0.065	.	1.467	0.202
1	NCS DC14003c	54.28	8.05	.	1.22	.	.	.	10.73	.	0.020	.	.	.	0.10	.	2.46	.
1	NCS DC28022	52.63	11.47	.	2.02	.	.	.	13.42	.	.	.	.	.	.	.	1.86	.
1	NCS DC14003d	51.69	6.88	.	1.79	.	.	.	12.06	.	0.029	.	.	.	0.17	.	4.12	.
1	NCS DC15007	51.63	12.85	.	2.01	.	.	.	15.79	.	0.0025	.	.	.	0.104	.	1.24	.
2	DH 5624	49.86	.	.	1.338	0.043	.	.	15.48	0.023	.	.	.	.	0.233	.	3.36	.
1	ECRM 676-1	39.76	.	3.40	.	.	.	12.78	.	.	.	.	0.10	0.43	.	1.16	.	.

continued analysis listed in mass % except * which is mg/kg

Number	Mn	MnO	Na	Na_2O	Ni*	NiO	P	P_2O_5	PbO	S	Si	SiO_2	SrO	Ti	TiO2	V	V_2O_5	ZnO	
DH 5601	0.324	.	.	0.100	.	0.024	.	0.055	.	0.007	.	4.03	0.004	.	0.629	.	0.250	0.003	
DH 5622	0.625	.	.	0.043	.	.	.	0.199	.	.	.	5.79	.	.	0.115	.	0.020	0.005	
DH 5620	0.241	.	.	0.022	.	0.006	.	0.126	.	.	.	5.84	.	.	0.093	.	0.016	0.013	
DH 5614	0.308	.	.	0.024	.	0.008	.	0.096	0.004	0.012	.	5.56	.	.	0.113	.	0.032	0.007	
DH 5628	0.429	.	.	.	.	.	.	0.129	.	0.012	.	4.79	.	.	0.109	.	.	0.067	
DH 5623	0.311	.	.	0.042	.	.	.	0.123	0.002	.	.	6.07	.	.	0.084	.	0.017	0.085	
DH 5619	0.287	.	.	0.026	.	0.008	.	0.129	.	0.009	.	6.05	.	.	0.102	.	0.019	0.008	
DH 5616	0.477	.	.	.	.	.	.	0.140	.	.	.	5.18	.	.	0.101	.	0.018	0.013	
DH 5603	0.344	.	.	.	.	0.015	.	0.134	.	.	.	6.78	.	.	0.171	.	0.034	0.006	
DH 5613	0.395	.	.	0.044	.	.	.	0.104	.	.	.	6.04	.	.	0.125	.	0.027	0.008	U: 2.3*
ECRM 683-1	0.462	.	0.045	.	.	.	0.148	.	.	.	3.38	.	.	0.097	.	0.026	.	Zn:0.010	
BS 104	.	0.82	.	.	.	.	0.059	.	.	0.010	.	7.81	.	.	0.08	.	.	.	
BS 104A	.	1.05	0.02	.	.	.	0.044	.	.	0.014	.	7.96	.	.	0.10	.	.	.	
DH 5604	0.744	.	.	0.081	.	.	.	0.248	.	0.030	.	6.84	.	.	0.116	.	0.043	0.019	
NCS DC14003c	0.175	.	.	0.093	.	.	0.026	.	.	0.022	7.92	.	.	.	0.041	.	last of stock		
NCS DC28022	0.349	.	.	.	.	.	0.064	.	.	0.025	.	7.22	.	.	.	.	.	.	
NCS DC14003d	0.369	.	.	0.098	.	.	0.057	.	.	0.044		7.39		0.084	.	.	.	.	
NCS DC15007	.	0.115	.	0.035	.	.	0.036	.	.	0.072	.	7.61	.	.	0.127	.	.	.	
DH 5624	1.170	.	.	0.053	.	0.003	.	0.082	.	0.051	.	6.84	0.013	.	0.082	.	0.005	0.004	
ECRM 676-1	0.83	.	0.095	.	.	.	0.59	.	.	0.12	6.40	.	.	0.19	.	0.070	.	.	

CRM KAOLIN

GBW: 50 g units UNS: 100 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	LOI
GBW 03121	54.55	31.41	(0.026)	0.052	(0.026)	0.50	11.72	0.34	0.12	0.0032	0.015	0.099	0.53	0.69	11.94
UNS KK	47.06	36.77	.	0.236	.	0.982	12.75	1.063	0.192	0.015	0.032	.	.	0.166	.
GBW 03122	44.53	38.62	(0.06)	0.16	(0.33)	0.72	14.77	0.049	0.068	0.0054	0.069	0.21	0.12	0.39	15.00

CRM KIMBERLITE

analysis listed in mass %

Number	Al_2O_3	Ba	CaO	CO_2	Cr	Cr_2O_3	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	Ni	P_2O_5	S	SiO_2	Sn	Sr	TiO_2
SARM 39	4.29	0.17	9.69	.	.	0.19	(4.0)	9.29	1.04	26.24	0.17	(0.5)	0.0994	1.46	(0.15)	33.44	.	0.14	1.58
VS 2114-81	2.66	0.025	6.47	5.71	0.068	.	2.24	T=7.57	0.412	26.96	0.111	0.087	0.106	0.216	0.032	37.66	2.5	0.028	0.97

continued analysis listed in mg/kg

Number	Ce	Co	Cu	Ga	Mo	Nb	Pb	Rb	Sc	Th	V	Y	Zn	Zr	Units
SARM 39	(85)	77	58	(10)	(5)	110	(25)	52	.	(10)	109	17	70	239	100 g
VS 2114-81	.	73	35	6.8	1.3	38	6.2	.	1.9	.	47	9.1	63	83	40 g

CRM KINZINGITE

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
SARM 45	26.22	0.78	12.60	(10.0)	3.18	3.39	0.10	0.84	0.08	49.62	1.82

continued analysis listed in mg/kg

Number	Ba	Ce	Co	Cr	Cu	Ga	Nb	Ni	Pb	Rb	Sr	Th	V	Y	Zn	Zr
SARM 45	(900)	(100)	41	256	11	(35)	27	80	(20)	142	92	(21)	266	63	74	322

RM LEAD BASILICATE

analysis listed in mass % 25 or 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	PbO	SiO_2	TiO_2	LOI
CERAM AN28	2.40	0.04	0.03	0.04	<0.01	0.04	64.5	32.8	<0.01	0.13

CRM LEAD ORE TAILINGs

analysis listed mass % 100 g units

Number	Al_2O_3	CaO	Cd	Cu	F	Fe_2O_3	K_2O	MgO	MnO	Mn_3O_4	Na_2O	Pb	PbO	S	SiO_2	SrO	TiO_2	Zn	ZnO	LOI
GBW 07235	12.88	19.51	.	0.20	0.27	4.37	1.42	1.62	1.40	.	1.61	4.17	.	0.86	43.63	.	0.53	0.062	.	.
GBW 07236	8.95	34.56	.	0.035	0.23	3.79	0.82	2.06	1.53	.	0.066	0.61	.	0.38	30.51	.	0.44	0.092	.	.
BCS 362	0.667	44.21	0.020	.	.	0.483	0.14	0.068	.	0.829	0.084	.	2.63	1.48	9.03	0.034	0.047	.	2.59	32.81

continued analysis listed in mg/kg

Number	Ag	As	Bi	Cd	Ce	Cr	Cs	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li	Lu
GBW 07235	14.7	85.1	15.6	3.2	78.3	(29)	(6)	3.0	1.2	1.5	16.7	3.7	0.90	0.61	0.12	40.5	(19)	0.24
GBW 07236	5.6	43.2	12.5	2.6	66.8	(41)	(2.3)	3.1	0.82	1.6	11.7	3.6	0.93	0.65	0.09	31.2	(18)	0.25
BCS 362	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Mo	Nd	Ni	Pr	Rb	Sb	Sc	Se	Sm	Sn	Tb	Te	Th	Tl	Tm	W	Y	Yb
GBW 07235	1.6	28.2	27.7	8.1	(55)	39.3	7.5	1.7	5.1	3.0	0.58	3.9	10.2	0.43	0.23	17.6	15.4	1.5
GBW 07236	1.3	23.4	34.5	6.2	(74)	12.0	8.1	0.81	4.6	2.9	0.60	1.2	10.5	1.0	0.26	30.6	16.2	1.7
BCS 362	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM LEAD ORE

analysis listed in mass %

Number	Pb	Ag	Cd	Cu	Fe	Hg	Ba	Re	S	Sb	Tl	Zn	Zr	Units
KZ 188-89	85.4	0.14576	0.0061	.	.	0.00091	.	.	13.3T	0.19	0.00109	0.40	.	100 g
KZ 2890-84	61.0	0.01267	0.016	4.99	.	.	.	0.00214	.	.	.	1.85	.	100 g
KZ 6586-93	3.5	0.0019	.	0.013	2.03	.	0.38	.	0.55	.	.	0.045	0.019	100 g
KZ 5177-90	1.84	0.00181	.	.	.	.	10.3	.	2.96	.	.	.	.	100 g

CRM LIMESTONE WITH DOLOMITE

analysis listed in mass % except * which is mg/kg DK: 60 g GBW: 70 g IPT: 80 g SRM, VS: 75 g Ins.Res. = insoluble residue

Number	CaO	Al_2O_3	CO_2	Fe_2O_3	K_2O	MgO	MnO	Mn_3O_4	Na_2O	P*	P_2O_5	S	SiO_2	SrO	TiO_2	LOI	Ins.Res.
GBW 07216A	35.02	0.24	.	0.495	(0.001)	17.88	0.020	.	0.013	12	.	0.0093	0.049	.	.	46.32	.
GBW 07217A	32.11	0.017	.	0.224	0.0011	20.37	0.032	.	0.023	10	.	0.018	0.021	.	.	46.89	.
IPT 122	32.0	1.24	.	0.65	0.43	17.5	0.042	.	0.019	.	0.048	.	4.3	0.018	0.06	43.3	.
VS K4/2	31.3	0.46	.	0.56	.	20.1	0.033	.	.	.	.	.	0.93	.	.	.	1.24 last
VS K4/3	31.3	0.46	.	0.56	.	20.1	0.034	.	.	.	.	.	0.93	.	.	.	1.25
VS K4/4	31.2	0.47	.	0.56	.	20.1	0.034	.	.	.	.	.	0.96	.	.	.	1.30
SRM 88b	29.95	0.336	46.37	0.277	0.1030	21.03	Mn: 0.0160		0.0290	.	0.0044	.	1.13	0.0076	(0.016)	(46.98)	.
DK 2a	29.2	0.91	.	1.01	0.37	19.5	.	0.06	0.04	.	.	SO_3:0.06	4.3	.	0.07	44.3	.

CRM LIMESTONE WITH EXTENSIVE ANALYSIS

analysis listed in mass % GUW KH: 20 g GUW KH2, 3: 50 g GBW, NCS: 70 g others: 100 g

Number	CaO	Al_2O_3	CO_2	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
JLs-1	55.09	0.0207	43.58	.	0.0178	0.0168	(+0.140) -0.105	0.00297	0.606	0.00209	0.00194	0.0295	0.120	trace	.
SRM 1d	52.85	0.526	.	.	0.3191	.	.	0.1358	0.301	.	0.0109	0.0413	4.080	0.0306	41.57
NCS DC73375	51.1	0.68	39.8	(0.06)	.	0.21	(+0.4)	0.15	0.71	.	(0.03)	.	6.65	.	40.2
GUW KH	47.8	2.39	37.6	0.33	0.92	.	.	0.41	0.74	0.088	.	0.121	8.60	0.130	.
GUW KH2	47.64	2.365	37.51	(0.31)	0.855	.	(1.26)	0.437	0.656	0.0848	0.106	0.117	8.66	0.130	.
GUW KH3	47.6	2.40	37.6	0.32	0.87	.	(1.4)	0.43	0.65	0.080	0.10	0.117	8.59	0.130	38.6
VS 3193-89	38.46	1.89	.	1.8	2.43	.	.	0.49	5.97	0.28	0.46	0.030	12.40	0.093	.
GBW 07108	35.67	5.03	32.4	1.64	.	2.52	+(2.12)	0.78	5.19	.	(0.08)	.	15.60	.	34.1
JDo-1	33.96	0.0174	46.50	(0.071)	0.0222	0.0208	+0.395 -0.145	0.00232	18.47	0.00657	0.0129	0.0343	0.216	.	.
VS 813-89	29.48	0.43	45.6	0.36	0.47	.	0.4	0.35	20.75	0.050	0.07	0.011	2.69	0.025	.
VS 3192-89	21.56	5.48	.	1.8	3.15	.	.	2.75	12.89	0.30	1.38	0.060	19.92	0.28	.

analysis listed in mg/kg except % which is mass % and * which is ng/g

Number	Ag	As	Au*	B	Ba	Be	Bi	Br	Carbon%	Cd	Ce	Cl	Co	Cr	Cs	Cu
JLs-1	(0.013)	(0.145)	trace	.	476	.	.	.	(11.980)	0.159	0.521	.	0.0825	3.37	0.0201	0.268
SRM 1d	.	.	.	BaO: 33		(0.1)	.	.	11.50	(0.3)	(4)	(130)	.	.	(0.4)	.
NCS DC73375	(0.024)	0.67	.	(6)	8.6	0.13	0.032	.	.	(0.018)	4.6	(30)	(0.7)	(3.3)	(0.12)	(2.2)
GUW KH	.	.	.	.	50	.	.	.	.	.	.	.	5.3	15	1.4	10
GUW KH2	.	.	.	.	46.3	.	.	.	.	.	18.1	.	(10)	14.2	12.2	8
GUW KH3	.	.	.	.	.	.	.	.	(0.14 Org)	.	.	.	.	.	.	.
VS 3193-89	.	.	.	.	50	.	.	.	.	.	16	.	2.3	9	.	4
GBW 07108	0.043	4.7	(0.94)	16	120	0.8	0.16	.	9.0 tot (0.11 org)	0.07	25	78	9	32	3.2	23
JDo-1	(0.0019)	(0.114)	trace	.	6.14	.	.	(0.79)	(12.760)	0.644	2.49	.	0.168	7.93	.	1.41
VS 813-89	.	.	.	5	30	1.3	.	.	.	.	.	.	3.0	6	.	8
VS 3192-89	.	.	.	.	400	.	.	.	.	.	27	.	12	30	.	29

Number	Dy	Er	Eu	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Li_2O	Lu	Mn	Mo
JLs-1	0.0283	.	0.0072	57.5	.	(0.030)	.	0.126	(0.0056)	.	.	.	0.153	(0.2)	.	0.0220	.	.
SRM 1d	(0.6)	(0.4)	(0.1)	(160)	(1)	(0.5)	.	.	.	(0.1)	.	.	(4)	.	.	.	209	.
NCS DC73375	0.28	0.15	0.082	240	(0.8)	0.36	0.13	0.21	0.0005	(0.04)	.	(0.03)	2.3	4.5	.	0.023	30	0.18
GUW KH	.	.	.	570	.	.	.	0.78	.	.	.	.	.	8.6	.	0.12	.	.
GUW KH2	.	.	0.47	610	.	.	.	.	.	.	.	.	.	(7)	.	0.127	.	.
GUW KH3	.	.	.	(610)	.	.	.	.	.	.	.	.	.	.	(21)	.	.	.
VS 3193-89	.	.	.	.	.	.	.	.	.	.	.	.	8	.	.	.	.	.
GBW 07108	1.6	1.0	0.51	406	7.1	1.9	0.67	1.8	0.016	0.33	0.23	(0.04)	15	20	.	0.14	434	0.38
JDo-1	0.814	.	0.176	246	.	(1.3)	.	(0.0897)	(0.0095)	(0.42)	.	.	7.93	(0.4)	.	0.0494	.	(0.78)
VS 813-89	.	.	.	200	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3192-89	.	.	.	.	.	.	.	.	.	.	.	.	13	40	.	.	.	0.08

Number	Nb	Nd	Ni	P	Pd	Pb	Pr	Pt	Ra	Rb	S	SO_3%	Sb	Sc	Se	Sm	Sn
JLs-1	(1.0)	(0.136)	0.362	.	trace	(0.7)	(0.032)	trace	.	(0.18)	123	.	(0.0166)	0.0307	.	0.135	.
SRM 1d	(0.7)	(3)	(4)	.	.	.	(0.6)	.	.	(6)	1028	.	.	.	(0.5)	(1)	
NCS DC73375	(0.8)	1.95	(4)	57	.	(5)	0.60	.	.	4.0	35	.	0.068	(0.7)	0.021	0.40	(0.5)
GUW KH	.	.	20	.	.	.	.	.	.	25	.	.	.	30	.	2.2	.
GUW KH2	.	.	20.3	.	.	(6)	.	.	.	22	.	.	.	2.83	.	.	.
GUW KH3	.	.	.	.	.	.	.	.	.	.	900	(0.2)	.	.	.	.	.
VS 3193-89	7	.	5	.	.	10	.	.	.	15	.	.	.	2.2	.	.	.
GBW 07108	6.6	12.0	18	226	.	18	3.4	.	.	32	(370)	.	0.43	6.0	0.09	2.4	(0.98)
JDo-1	(0.4)	5.25	2.90	.	trace	(0.95)	0.956	trace	.	(1.75)	(90.5)	.	(0.036)	0.136	(0.0468)	0.788)	.
VS 813-89	.	.	5	.	.	8	.	.	2e-10	5	200	.	.	.	.	.	.
VS 3192-89	37	.	18	.	.	13	.	.	.	57	.	.	.	8	.	.	1.7

Number	Sr	SrO	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	ZnO	Zr
JLs-1	295	.	(0.014)	(0.0041)	.	0.0287	.	(0.003)	.	1.75	3.59	.	0.223	0.0164	3.19	.	(4.19)
SRM 1d	.	303	.	(0.09)	.	(0.5)	.	.	.	(1)	(10)	.	(5)	(0.3)	.	22	.
NCS DC73375	110	.	(0.05)	0.054	.	0.86	0.023	(0.03)	0.022	0.23	5.2	0.13	(1.8)	0.15	(7)	.	(11)
GUW KH	545	.	0.19	.	.	2.6	.	.	.	.	24	.	.	0.86	22	.	35
GUW KH2	532	.	.	.	.	2.08	.	.	.	(8)	.	.	.	.	22.9	.	.
GUW KH3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3193-89	440	.	.	.	.	1.8	.	.	.	1.0	.	.	.	0.9	30	.	27
GBW 07108	913	.	0.42	0.35	(0.024)	4.1	0.1960	0.33	0.17	1.9	36	0.67	9.1	0.90	52	.	62
JDo-1	116	.	(0.009)	0.116	.	0.0429	.	(0.003)	(0.059)	0.858	3.14	.	10.3	0.323	35.4	.	6.21
VS 813-89	90	.	.	.	.	1.0	.	.	.	1.5	25	.	.	.	30	.	30
VS 3192-89	44	.	.	.	.	15	.	.	.	0.8	22	.	.	2.5	30	.	70

LIMESTONE

= class, where 1 = CRM and 2 = RM

f.SiO2 = free SiO_2

#	Number	CaO	Al_2O_3	Fe	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P	P_2O_5	S	SO_3	SiO_2	f.SiO_2	TiO_2	LOI
1	VS W10/3	55.8	0.012	.	.	.	0.32	.	.	0.0035	.	0.0053	.	0.050	.	.	.
1	ECRM 752-1	55.4	0.12	.	0.045	0.02	0.15	0.01	(<0.03)	.	(0.01)	0.007	.	0.70	.	0.009	43.4
1	GBW 07214A	55.34	0.093	.	0.085	0.020	0.29	0.0050	(0.007)	0.0011	.	0.043	.	0.22	.	.	43.61
1	BCS 513	55.59	0.108	.	0.0275	0.0150	0.182	0.0095	(<0.3)	.	(0.005)	0.0097	.	0.228	.	(0.004)	43.61
1	DK 1a	55.4	0.05	.	0.04	0.01	0.39	0.01	0.01	.	.	.	0.02	0.64	.	<0.01	43.3
1	NM 711	55.10	.	.	.	.	0.50	.	.	.	.	.	.	0.52	.	.	43.48
1	VB K1	54.58	0.11	.	0.097	(0.028)	0.72	0.0095	0.020	.	(0.016)	.	(0.051)	0.44	.	(0.011)	43.70
1	GBW 03105a	54.03	0.24	.	0.11	0.084	0.81	0.0067	0.017	.	0.0081	.	0.018	1.09	0.67	0.010	43.12
1	NCS DC14017a	53.93	0.51	.	.	0.093	0.56	0.014	0.020	0.0013	.	0.201	.	1.13	.	.	.
1	IRSID 701-1	52.69	0.55	0.73	.	.	0.60	0.028	.	.	0.050	0.040	.	1.99	.	0.030	.
1	NCS DC60108a	51.61	0.33	.	0.17	0.17	2.25	0.0089	0.017	.	0.0061	.	0.016	2.09	1.38	0.015	42.84
2	DH X3514	51.49	0.483	.	0.422	0.075	2.161	0.020	0.042	.	0.034	.	0.197	2.533	.	0.023	.
1	NCS DC62002b	50.87	1.07	.	0.48	0.45	1.03	.	0.06	.	.	.	0.05	4.55	.	0.06	40.99
1	IPT 44	50.5	0.33	.	0.30	0.12	2.93	0.015	0.003	.	0.013	.	.	2.69	.	0.019	42.9
2	DH X3515	48.91	0.787	.	1.293	0.187	0.379	0.028	0.032	.	0.036	0.025	.	8.75	.	0.048	.
1	DK 1b	43.6	3.20	.	1.25	0.96	3.00	0.02	0.13	.	.	.	0.13	9.5	.	0.15	37.7
1	VB K2	43.19	3.93	.	1.39	0.82	0.65	0.025	0.064	.	.	.	0.22	13.38	.	(0.21)	35.61

continued

Number	CO_2	Cl^-	Cr	Cr_2O_3	Cu	Pb	SrO	Zn	Units
VS W10/3	.	.	.	.	.	.	.	.	75 g
ECRM 752-1	.	.	.	.	.	.	0.019	.	100 g
GBW 07214A	.	.	.	.	.	.	.	.	50 g
BCS 513	.	.	.	0.0012	.	0.0009	0.0176	0.0014	100 g
DK 1a	.	.	.	.	.	.	.	.	60 g
NM 711	.	.	.	.	.	.	.	.	100 g
VB K1	(43.54)	.	(0.0025)	.	(0.00055)	.	.	.	100 g
GBW 03105a	(43.12)	0.0028	.	.	.	.	.	.	50 g
NCS DC14017a	.	.	.	.	.	.	.	.	70 g
IRSID 701-1	.	.	.	.	.	.	.	.	100 g
NCS DC60108a	(42.59)	0.0066	.	.	.	.	.	.	50 g
DH X3514	.	.	.	.	.	.	0.030	.	100 g
NCS DC62002b	.	.	.	.	.	.	.	.	20 g
IPT 44	.	.	.	.	.	.	0.04	.	100 g
DH X3515	.	.	.	.	.	.	0.050	.	100 g
DK 1b	.	.	.	.	.	.	.	.	60 g
VB K2	.	.	.	.	.	.	.	.	100 g

CRM LIMESTONE WITH DOLOMITE

Number	Al	Ca	Fe	Mg	Mn	P	S	Si	Ti	Units
IRSID 702-1	0.21	21.48	0.440	12.37	0.098	0.024	0.027	1.04	0.013	100 g

CRM SYNTHETIC LIMESTONE WITH TRACE ELEMENTS

Material base: $CaCO_3$ 85%, $MgCO_3$ 8%, SiO_2 5.2%, Al_2O_3 1.1%, Fe_2O_3 0.3%, Na_2SO_4 0.2%, K_2SO_4 0.2%

70 g units analysis listed in mg/kg

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mn
GBW 07712	(0.030)	2.2	2.2	24	0.22	0.23	(0.023)	2.8	2.3	2.3	2.2	2.8	2.6	3.2	37
GBW 07713	0.060	5.2	5	54	0.52	0.53	0.053	5.8	5.3	5.3	5.2	5.8	5.6	6.2	67
GBW 07714	0.11	10.2	10	104	1.0	1.0	0.10	11	10.3	10.3	10.2	10.8	10.6	11.2	117
GBW 07715	0.21	20	20	204	2.0	2.0	0.20	21	20.3	20.3	20	20.8	20.6	21	217
GBW 07716	0.51	50	50	504	5.0	5.0	0.50	51	50	50	50	51	50.6	51	517
GBW 07717	1.0	100	100	1000	10	10	1.0	101	100	100	100	101	101	101	1020
GBW 07718	2.0	200	200	2000	20	20	2.0	200	200	200	200	200	200	200	2020
GBW 07719	5.0	500	500	5000	50	50	5.0	500	.	.	500	.	.	500	5000
GBW 07720	10	.	.	.	100	100	10	.	.	.	1000	.	.	.	10000

continued

Number	Mo	Nb	Ni	Pb	Sb	Sn	Sr	Ti	V	W	Y	Yb	Zn	Zr
GBW 07712	0.21	2.5	2.1	2.4	0.21	0.28	170	31	3.2	0.22	2.1	0.22	3.0	4.0
GBW 07713	0.51	5.5	5.1	5.4	0.51	0.58	200	61	6.2	0.52	5.1	0.52	6.0	7.0
GBW 07714	1.0	10.5	10	10.4	1.0	1.1	250	111	11.2	1.0	10	1.0	11	12
GBW 07715	2.0	20.5	20	20.4	2.0	2.1	350	210	21	2.0	20	2.0	21	22
GBW 07716	5.0	50.5	50	50	5.0	5.1	650	510	51	5.0	50	5.0	51	52
GBW 07717	10	100	100	100	10	10	1150	1010	101	10	100	10	101	102
GBW 07718	20	200	200	200	20	20	2200	2000	200	20	200	20	200	202
GBW 07719	50	.	500	500	50	50	5200	5000	500	50	.	50	500	500
GBW 07720	100	.	.	1000	100	100	.	.	.	100	.	100	1000	.

CRM LITHIUM ORE

analysis listed in mass %

Number	Li_2O	Al_2O_3	CaO	Cs_2O	F	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	Rb_2O	SiO_2	TiO_2	LOI
NCS DC86314	3.89	24.53	0.063	0.30	5.08(F-)	(0.043)	0.30	(2.77)	7.75	0.027	0.40	1.08	0.13	1.20	53.92	0.029	(5.34)
NCS DC86304	2.29	19.12	0.076	0.177	3.12	(0.020)	0.301	2.29	4.80	0.036	0.252	2.33	0.237	0.735	64.64	0.028	4.06
NCS DC86303	0.460	14.76	0.335	0.037	0.667	(0.062)	0.394	1.06	3.17	0.054	0.070	4.19	0.173	0.145	74.37	0.018	1.48

continued analysis listed in mg/kg except % which is mass %

Number	BeO%	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nb_2O_5	Nd_2O_3	Pr_6O_{11}
NCS DC86314	0.0164	(1.88)	0.50	0.24	0.10	0.56	0.094	1.16	0.036	81	1.66	0.46
NCS DC86304	0.026	2.6	0.64	0.26	0.13	0.75	(0.13)	(2.1)	0.034	61.1	2.8	0.63
NCS DC86303	0.018	9.0	2.5	1.2	(0.14)	2.1	0.45	5.1	0.18	27.0	5.0	1.3

Number	RE_xO_y*	Sc_2O_3	Sm_2O_3	Sn	Ta_2O_5%	Tb_4O_7	Tm_2O_3	W	Y_2O_3	Yb_2O_3	Units
NCS DC86314	10.7	0.31	0.52	152	0.0132	0.10	0.038	79.0	3.06	0.22	100 g
NCS DC86304	15.2	0.44	6.4	97.1	0.012%	0.13	0.040	43.7	3.4	0.23	70 g
NCS DC86303	47.0	0.98	1.6	(36)	0.00494	0.43	0.18	8.9	16.9	1.3	70 g

* RE_xO_y: Rare Earth Oxide

CRM LITHIUM ORE

45 g units

Number	Li_2O%
SRM 181	6.39
SRM 182	4.34
SRM 183	4.12

CRM LUJAVRITE

analysis listed in mass %

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	TiO_2	Ba	Be	Co	Cr	Cu	F	Ga	Ge
VS 2124-81	56.13	16.96	1.25	1.14	5.52	6.23	0.74	0.254	9.26	0.92	0.080	0.00139	0.00063	0.00125	0.00111	.	0.0063	0.00013
SARM 3	52.40	13.64	3.22	1.13	8.78	5.51	0.28	0.77	8.37	0.48	.	.	.	.	.	0.44	.	.

continued

Number	La	Li	Mo	Nb	Ni	Pb	Rb	Sn	Sr	V	Y	Yb	Zn	Units
VS 2124-81	0.040	0.0037	0.00028	0.034	0.00078	0.0020	0.0250	0.0014	0.080	0.0086	0.0081	0.00057	0.012	40 g
SARM 3	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g

CRM LOW BORON MAGNESITE

Number	Al	B	Ca	Cr	Fe	K	Mg	Mn	Na	P	Si	Ti	Units
ECRM 779-1	0.105	0.0116	1.691	(0.0030)	3.73	(0.0020)	(54.57)	0.503	(0.0058)	0.0267	0.182	0.0081	100 g

CRM MAGNESITE

analysis listed in mass % — 100 g units | analysis listed in mg/kg

Number	MgO	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	Ba	Ce	Co	Cr	Cu	Ni	Sr	Zn
SARM 43	44.11	(0.06)	0.89	0.26	(0.1)	(0.04)	(0.1)	(0.05)	(0.02)	5.99	(0.01)	(25)	(20)	4	(195)	(15)	252	8	(10)

MAGNESITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	MgO	Al_2O_3	B_2O_3	CO_2	CaO	Cr_2O_3	Fe_2O_3	K_2O	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Units
1	BCS 389/1	97.89	0.104	.	.	0.880	.	0.607	.	0.100	.	0.0295	0.274	0.0052	.	100 g
1	BCS 319/1	95.38	0.109	.	.	3.00	0.0035	0.291	.	0.108	.	.	1.093	0.0070	.	100 g
2	CERAM AN37	93.9	1.08	.	.	1.54	0.005	1.87	.	0.11	.	.	1.41	0.04	.	25 or 100 g
2	CERAM AN36	93.2	0.49	.	.	0.97	0.06	4.71	0.01	0.11	.	.	0.49	0.01	.	25 or 100 g
1	NH 92	90.19	1.11	.	.	1.57	.	1.74	.	.	.	.	3.58	.	.	75 g
1	NH 8-3-01	86.7	0.41	.	.	2.55	.	7.50	.	.	.	.	0.80	.	.	75 g
1	NH 8-3-02	85.4	0.63	.	.	2.64	.	7.35	.	.	.	.	1.59	.	.	75 g
1	ECRM 778-1	81.02	0.56	.	.	1.23	0.15	0.96	.	0.014	.	(0.009)	1.05	(0.013)	.	100 g
1	USZ 37-2003	45.80	0.04	.	48.31	1.69	.	0.05	0.011	.	.	.	0.25	.	51.35	100 g
1	UNS MK	45.22	0.414	.	.	0.581	.	.	0.013	0.160	0.024	0.055	0.593	0.019	.	100 g
2	CERAM AN43	.	.	0.005	.	.	.	.	.	.	.	.	.	.	.	25 or 100 g
2	CERAM AN45	.	.	0.222	.	.	.	.	.	.	.	.	.	.	.	25 or 100 g

RM MAGNESITE

typical analysis listed in mass % — 100 g units

Number	MgO	Al_2O_3	C tot.	CO_2	CaO	Cr_2O_3	Fe_2O_3	K_2O	Mn_3O_4	Na_2O	P_2O_5	S	SO_3	SiO_2	TiO_2	$-H_2O$ at 900'C
DH 4209	98.03	0.098	0.031	0.132	0.866	0.016	0.515	.	0.107	.	0.027	.	0.012	0.222	0.007	.
DH 4207	83.65	2.39	0.539	0.54	2.23	0.036	1.49	0.072	0.074	0.385	0.087	.	0.037	7.73	0.149	0.84
DH 4203	76.81	1.27	0.396	0.104	1.29	0.119	2.75	0.019	0.090	0.375	0.059	.	0.070	15.94	0.054	1.01
DH 4208	47.83	41.66	0.353	0.580	2.06	0.040	1.49	0.037	0.070	.	0.077	0.007	.	5.09	0.066	0.894

continued

Number	V_2O_5	ZnO	ZrO_2
DH 4209	0.003	0.003	.
DH 4207	.	.	0.011
DH 4203	.	.	.
DH 4208	0.001	0.006	0.091

CRM MANGANESE ORE

analysis in mass % T = Total

Number	Mn	MnO_2	$Mn(CO_3)$	Al_2O_3	As_2O_3	Ba	BaO	CO_2	CaO	Fe	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2
IGS 29	MnO: 93.31	.	.	.	0.59	.	.	.	.	.	.	.	.	.	.	.	.
VS R13/3	58.88	90.4	.	.	.	.	.	.	.	.	.	.	.	.	.	2.01	.
VS R13/3	58.88	90.4	.	.	.	.	.	.	.	.	.	.	.	.	.	2.01	.
VS P13/1	58.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.00	.
SRM 25d	51.78	.	.	5.32	.	.	(0.21)	.	(0.052)	.	3.92	0.93	.	.	0.25	2.52	0.13
SARM 16	49.17	.	.	(0.3)	.	.	0.60	.	4.70	11.48	.	0.02	0.76	(0.03)	.	5.04	.
BAM 633-1	47.85	.	.	1.64	(0.004)	.	1.13	.	2.02	1.64	.	.	0.58	.	.	10.39	0.079
BCS 176/2	47.5	.	.	5.2	0.22	.	0.19	.	0.09	6.86	.	1.30	0.04	0.11	.	2.53	0.30
NM 662	47.43	.	.	1.65	.	.	.	.	.	10.045	.	.	.	.	0.295	4.96	.
RH01	47.0	(50.5)	.	(1.5)	.	.	(0.29)	.	(1.8)	(1.6)	.	(1.3)	(1.1)	(0.4)	.	12.4	.
IPT 52	46.1	.	.	10.6	0.0026	.	0.32	.	0.15	2.40	.	1.60	0.25	0.10	.	3.06	0.28
CMSI 1690	45.39	67.25	.	2.20	.	.	0.68	.	1.06	1.22	.	1.00	0.64	0.044	.	16.16	0.063
VS P12/2	43.24	52.4	.	1.87	.	.	0.53	.	2.02	1.56	.	.	1.16	.	.	15.00	.
SARM 17	38.81	.	.	0.24	.	.	(0.08)	.	(14.4)	4.27	.	0.09	3.03	0.09	.	4.69	.
CMSI 1691	36.99	54.38	.	3.00	.	.	0.47	.	3.60	2.24	.	0.46	1.44	0.048	.	22.24	0.10
VS 5404-90	34.12	48.66	.	5.28	.	.	.	.	4.68	6.68	.	0.83	0.45	0.38	.	15.69	0.27
CMSI 1692	32.54	48.01	.	8.55	.	.	0.18	.	0.083	11.24	.	0.93	0.11	0.039	.	14.50	0.43
CMSI 1693	25.00	36.93	.	8.97	.	.	0.23	.	0.051	20.99	.	0.72	0.10	0.030	.	10.46	0.54
KZ 186-89	24.43T	.	.	1.92	.	.	.	.	19.82	8.23T	.	.	3.00	.	.	6.20	0.088
CMSI 1694	22.54	.	22.46	1.68	.	.	0.13	.	14.73	1.40	.	0.46	3.50	0.024	.	14.07	0.10
KZ 185-89	21.61T	.	.	1.42	.	.	.	.	25.72	1.11T	.	0.11	0.95	.	.	16.07	0.066
VS 5408-90	19.88	27.17	.	3.59	.	0.74	.	.	16.02	3.76	.	0.80	0.38	0.29	.	22.37	0.19
VS 5406-90	15.98	14.40	.	9.78	.	2.65	.	1.29	1.96	2.43	.	4.99	0.74	0.70	.	47.66	0.31
CMSI 1695	15.74	.	15.69	2.49	.	.	0.15	.	19.78	2.07	.	0.70	3.82	0.040	.	15.82	0.15

Number	Ag	Co	Cu	Ge	Ni	P	Pb	S	Zn	Units	Other
IGS 29	.	.	.	.	.	.	.	.	.	40 g	
VS R13/3	.	.	0.0219	.	0.101	0.196	0.0013	0.07	.	100 g	
VS P13/1	.	.	.	.	.	0.197	0.0014	0.070	.	100 g	MnO: 90.4, last of stock
SRM 25d	.	.	.	.	.	.	.	.	.	60 g	available Oxygen: 14.28, H_2O: (0.96)
SARM 16	.	.	.	.	.	0.033	.	0.17	0.0364	100 g	
BAM 633-1	.	.	.	.	.	0.170	.	0.227	.	100 g	
BCS 176/2	.	.	.	.	.	0.087	.	0.018	.	100 g	
NM 662	.	.	.	.	.	.	.	.	.	100 g	
RH01	.	.	.	.	.	0.29	.	(0.026)	.	100 g	LOI: (13.0)
IPT 52	.	0.063	0.056	.	0.040	0.035	0.014	0.018	.	120 g	
CMSI 1690	.	.	0.013	.	0.019	0.054	.	0.007	0.027	100 g	
VS P12/2	.	.	.	.	.	0.209	.	0.029	.	100 g	
SARM 17	.	.	.	.	.	0.018	.	(0.01)	0.0043	100 g	
CMSI 1691	.	.	0.014	.	0.019	0.081	.	0.013	0.029	100 g	
VS 5404-90	.	0.0086	.	0.00034	0.013	0.027	0.15	0.023	0.16	50 g	
CMSI 1692	.	.	0.036	.	0.099	0.207	.	0.019	0.064	50 g	
CMSI 1693	.	.	0.028	.	0.073	0.275	.	0.032	0.048	100 g	
KZ 186-89	.	.	.	0.0003	.	0.047	0.048	0.071T	0.36	100 g	
CMSI 1694	.	.	0.009	.	0.041	0.043	.	0.21	0.018	100 g	
KZ 185-89	.	.	.	.	.	0.014	0.122	0.087T	0.047	100 g	
VS 5408-90	0.000233	.	.	0.00219	.	0.032	0.15	0.20	0.86	50 g	
VS 5406-90	.	.	.	0.00049	.	0.043	0.23	0.22	0.018	50 g	
CMSI 1695	.	.	0.014	.	0.050	0.061	.	0.27	0.020	100 g	

CRM MANGANESE NODULE

analysis listed in mass % JMn: 100 g US: 30 g VS: 50 g

Number	MnO	MnO_2	Al_2O_3	C(org)	CO_2	CaO	Fe_2O_3	K_2O	MgO	Na_2O	Ni	P_2O_5	SiO_2	TiO_2	LOI	As	Ba	Ce
US NOD-P-1	37.6	.	4.8	.	.	3.1	8.3(T)	1.2	3.3	2.2	1.3400	0.46	13.9	0.5	.	.	0.3350	(0.03)
VS 5374-90	35.09	41.7	5.68	0.18	0.43	2.82	9.28	1.27	3.40	2.94	1.37	0.68	16.60	0.74	15.3	0.006	0.18	0.020
JMn-1	33.09	.	4.30	.	.	2.91	14.40(T)	0.94	3.12	2.80	1.2632	0.54	14.11	1.06	.	0.00754	0.1714	0.028
VS 5373-90	29.91	35.8	5.21	0.18	0.39	2.77	17.21	1.18	2.74	2.61	0.84	0.65	16.20	1.47	14.8	0.011	0.19	0.05
VS 5375-90	25.16	31.1	5.46	0.22	0.60	3.01	24.87	0.83	2.24	2.40	0.422	0.80	14.50	1.91	13.8	0.017	0.17	0.09
US NOD-A-1	23.9	.	3.87	.	.	15.4	15.6(T)	0.6	4.76	1.0	0.6360	1.40	3.81	0.53	.	.	0.1670	(0.07)
VS 5376-90	19.85	24.2	6.71	.	0.50	5.13	22.13	1.18	2.29	2.24	0.34	1.61	22.30	1.56	11.4	0.014	0.16	0.10

continued analysis listed in mass %

Number	Cl	Co	Cu	La	Li	Mo	Nb	Nd	Pb	S	Sm	Sr	V	Y	Zn	Zr
US NOD-P-1	.	0.2240	1.1500	(0.01)	.	0.0760	.	(0.0120)	0.0560	.	(0.0030)	0.0680	0.0570	.	0.1600	.
VS 5374-90	0.7	0.220	1.01	0.009	0.014	0.052	0.0020	0.008	0.040	0.10	0.0022	0.064	0.043	0.011	0.12	0.032
JMn-1	.	0.1732	1.1132	0.0122	(0.072)	0.0318	(0.003)	0.0137	0.0430	(0.09)	0.00302	0.0792	0.0424	0.0111	0.1068	0.0344
VS 5373-90	0.8	0.31	0.51	0.015	0.007	0.0043	0.0048	0.015	0.017	0.12	0.004	0.090	0.040	0.016	0.077	0.060
VS 5375-90	0.9	0.47	0.22	0.014	0.004	0.033	0.009	0.014	0.098	0.16	0.003	0.11	0.048	0.014	0.058	0.060
US NOD-A-1	.	0.3110	0.1100	(0.012)	.	0.0448	.	(0.0094)	0.0846	.	(0.0021)	0.1750	0.0770	.	0.0590	.
VS 5376-90	.	0.27	0.13	0.012	0.0019	0.035	0.006	0.010	0.105	0.16	0.0027	0.11	0.054	0.016	0.060	0.055

continued analysis listed in mg/kg JMn-1 also contains trace informational B, Bi, Ga, Hf, Or, Sn, Ta, and W

Number	Au	Be	Cd	Cr	Cs	Dy	Er	Eu	F	Gd	Ho	Lu	Pd	Pt	Rb	Sb	Sc	Tb	Th	Tl	Tm	U	Yb
US NOD-P-1	.	.	.	.	.	(27)	(12)	(7.5)	(104)	(28)	.	(1.8)	.	.	.	.	.	.	.	.	.	.	(13)
VS 5374-90	0.005	.	17	18	.	.	.	.	.	.	.	.	.	0.10	21	.	11	.	17	.	.	4	13
JMn-1	(trace)	(8)	(6)	26.6	0.60	(28)	14.6	7.6	.	(30)	5.8	2.1	.	(0.11)	10.9	37.5	(13)	4.8	11.7	.	2.1	5.0	13.8
VS 5373-90	0.008	.	9	17	.	.	.	.	.	.	.	.	.	0.19	16	.	12	.	31	.	.	5	21
VS 5375-90	0.010	.	5	19	.	.	.	.	.	.	.	.	0.003	0.21	10	.	13	.	38	.	.	8	14
US NOD-A-1	.	.	.	.	.	(23)	(12)	(5)	(120)	(26)	.	(2.2)	.	.	.	.	.	.	.	.	.	.	(14)
VS 5376-90	.	19	.	67	.	.	.	.	.	.	.	.	.	.	19	.	19	.	28	0.010	.	6	6

CRM ELEMENTARY MANGANESE ORE

Number	Mn of carbonates (Manganocalcite + Thodochrosite)	Mn of oxides (Jacobsite + Hausmannite)	Units
KZ 275-95	11.39	12.51	100 g

RM MANGANESE ORE

typical analysis listed in mass % — 100 g units

Number	Mn	Al_2O_3	Ba	C tot	CO_2	CaO	Fe	K_2O	MgO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	$-H_2O$ 900'C
DH 4302	36.80	0.538	0.737	0.419	1.24	3.93	20.26	0.106	0.619	0.083	0.075	0.487	9.57	0.035	1.00
DH 4305	36.32	1.28	0.383	.	8.63	8.57	9.32	0.198	1.75	0.109	0.097	0.298	11.72	0.073	1.64
DH 4304	30.65	2.96	0.204	0.041	0.056	0.078	28.25	0.261	0.064	0.012	0.253	0.016	2.41	0.104	4.46
DH 4303	29.05	2.17	0.119	0.072	0.062	0.060	30.01	0.244	0.032	0.017	0.199	0.018	3.63	0.070	4.28

continued

Number	Co_3O_4	Cr_2O_3	CuO	NiO	PbO	SrO	ZnO	ZrO_2
DH 4302	0.010	0.005	0.007	.	0.015	.	0.043	0.018
DH 4305	.	0.128	0.012	0.022	0.015	0.068	0.027	.
DH 4304	.	.	.	.	.	.	.	.
DH 4303	.	.	.	.	.	.	.	.

CRM MARIPOLITE

analysis listed in mass % — 40 g units

Number	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	K_2O	MnO	Na_2O	Nb	Rb	SiO_2	TiO_2
VS 2122-81	21.96	0.72	1.20	0.88	2.05	4.30	0.085	10.79	0.034	0.030	56.29	0.045

continued — analysis listed in mg/kg

Number	Ba	Be	Cr	Cu	Ga	Ge	La	Li	Mo	Ni	Pb	Sn	Sr	V	Y	Yb	Zn	Zr
VS 2122-81	170	86	9.8	21	80	1.4	130	4.3	5.2	6.5	25	15	120	13	64	5	69	70

CRM MERCURY ORE

analysis listed in mass % — 100 g units

Number	Hg	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SiO_2	TiO_2	Co	Cr	Cu	Ni	Sr	V	LOI
USZ 43-2006	0.0689	0.53	17.39	0.49	4.66	0.03	9.93	0.29	0.07	41.01	0.018	0.0047	0.21	0.0007	0.10	0.0382	0.0038	25.28

RM MOLOCHITE

analysis listed in mass % — 25 or 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	SiO_2	TiO_2
CERAM AN40	38.2	0.15	0.90	1.48	0.27	0.10	58.9	0.02

CRM MOLYBDENUM ORE AND CONCENTRATE

analysis listed in mass % NCS DC93010: 50 g all others: 100 g

Number	Mo	Al_2O_3	Ba	CaO	F	Fe_2O_3	K_2O	MgO	MnO	Na_2O	S	SiO_2	TiO_2	W	WO_3	Zn	Zr
GBW 07238	1.51	3.46	.	31.44	4.08	21.34	0.046	0.86	1.40	0.075	1.64	34.10	0.13	0.36	.	0.000655	.
GBW 07239	0.11	7.27	.	23.03	1.33	14.66	0.82	1.83	1.49	0.77	0.48	46.67	0.36	0.10	.	0.012	.
KZ 7025-93	0.067	.	0.27	.	.	.	.	.	.	.	.	.	.	.	0.04	.	0.013

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	Be	Bi	Cd	Ce	Cr	Cu	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li	Lu
GBW 07238	0.09	1.6	.	2.2	0.12	20.8	(24)	93.6	1.8	0.59	1.0	25.1	1.9	19.0	0.36	2.9	7.1	(3.2)	0.16
GBW 07239	0.12	1.0	.	1.0	0.09	60.3	(35)	48.6	5.8	1.5	3.2	23.1	5.8	12.4	1.2	1.3	37.4	(13)	0.41
KZ 7025-93	0.8	.	19	51	.	.	.	0.077%	.	.	.	.	.	.	.	.	.	.	.

Number	Nb	Nd	Ni	Pb	Pr	Re	Sb	Sc	Se	Sm	Sn	Tb	Te	Th	Tl	Tm	Y	Yb
GBW 07238	.	11.3	17.8	18.7	3.0	(0.35)	1.2	3.4	2.1	2.1	86.7	0.34	0.40	2.3	0.06	0.14	11.4	1.0
GBW 07239	.	29.8	20.9	26.1	7.4	(0.12)	0.26	8.4	0.27	6.4	33.2	0.98	0.14	9.7	0.21	0.44	34.2	2.8
KZ 7025-93	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM MOLYBDENUM ORE AND CONCENTRATE

= class, where 1 = CRM and 2 = RM % = mass % * = mg/kg GMO: 250 g units NCS DC93010: 50 g

Number	Mo%	Ag*	As%	Bi*	Cu%	P%	Pb%	Re%	S%	Sb*	SiO_2%	Zn%
USZ 5-88	51.6	.	.	.	1.35	0.014	.	0.05	.	.	4.50	.
NCS DC93010	40.83	.	0.016	.	0.26	0.013	0.46	.	.	.	22.07	.
NCS DC70018	5.17	.	.	.	0.031	.	0.20	.	4.06	.	.	0.024
GMO-04	0.7949	1.93	4.52	95	0.0240	.	0.0046	.	.	8.9	.	0.0128
GMO-03	0.5329	1.47	3.50	72	0.0191	.	0.0037	.	.	6.8	.	0.0122
GMO-02	0.2465	0.74	2.01	37	0.0114	.	0.0034	.	.	3.2	.	0.0109
GMO-01	0.0979	0.49	0.94	16	0.0081	.	0.0027	.	.	1.7	.	0.0105
GMO-07	0.00447	6.10	74.00	0.3	0.0014	.	0.0011	.	.	0.1	.	0.0011
GMO-05	0.00277	0.88	12.71	11	0.0639	.	0.0013	.	.	0.5	.	0.0087
GMO-09	0.00134	0.80	14.00	4.3	0.0284	.	0.0016	.	.	0.9	.	0.0037

CRM MULLITE

sold in set JCRM R041, R303 (Bauxite), and R304 (Sillimanite) only 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na2O	P_2O_5	SiO_2	TiO_2	ZrO_2+HfO_2
JCRM R041	70.18	0.059	0.598	0.174	0.190	0.197	0.136	28.11	0.185	0.058

CRM MULTI-METAL ORES

analysis listed in mass percent % and mg/kg * 250 g units

Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*
GBM997-6	**24.9095**	0.3818	0.0009	.	16.1944	462.7	5,091	.
GBM304-13	**23.5648**	9.7125	0.0021	.	5.9274	.	.	.
GBM309-10	**4.9144**	0.0503	0.0069	.	18.7866	47.3	65	78
GBM301-5	**3.6516**	0.1113	0.0393	.	0.5576	10.8	236	521
GBM908-14	**3.2955**	2.3715	.	10.71	4.2716	303.7	.	.
GBM306-12	**2.6812**	1.4804	0.9483	.	2.0500	.	.	.
GBM398-1	**2.6770**	1.4874	0.9511	.	2.0418	5.2	8	24
GBM903-13	**2.1492**	2.8953	2.4337	.	0.9342	.	.	.
GBM309-3	**2.1335**	0.0331	0.0058	.	10.8553	30.7	68	67
GBM399-5	**2.1173**	2.9424	2.4412	.	0.9493	24.2	320	46
GBM309-14	**1.5231**	2.8433	.	33.42	23.0789	155.7	.	.
GBM309-16	**1.5041**	5.3098	.	28.14	10.6947	227.9	.	.
GBM309-15	**1.3024**	3.4390	.	28.84	12.3691	163.5	.	.
GBM398-4	**1.1714**	0.3891	0.4071	.	0.5117	48.7	12	1,974
GBM996-5	**0.4058**	0.0160	0.0012	.	0.2569	167.9	80	.
GBM308-13	**0.3246**	1.8582	0.0044	16.30	0.9631	19.8	.	.
GBM307-16	**0.2778**	0.0950	0.0855	26.98	0.3668	.	.	.
GBM908-10	**0.2067**	0.3630	0.2257	.	0.1046	3.0	55	24
GBM309-2	**0.2047**	0.5286	0.0027	.	1.9204	25.0	49	45
GBM999-4	**0.2017**	0.1029	0.0008	.	0.0221	98.4	9	6
GBM901-8	**0.1657**	0.0837	0.0132	.	0.0272	2.2	917	113
GBM7	**0.1604**	1.3973	0.0049	.	0.0861	7.5	341	74
GBM399-6	**0.1446**	2.1373	0.0020	.	0.2488	15.5	175	4
GBM906-10	**0.1252**	0.1916	0.0032	.	0.0595	1.6	18	27
GBM999-8	**0.1061**	0.1852	0.3014	.	0.0537	1.8	185	25
GBM396-10	**0.1018**	0.2897	0.0095	.	1.0601	11.6	180	.
GBM306-14	**0.0909**	1.6709	3.4435	3.35	0.0765	8.1	.	.
GBM397-7	**0.0908**	0.0687	0.0243	.	0.0801	3.1	770	.
GBM900-3	**0.0873**	1.6681	3.4345	.	0.0714	7.5	319	150
GBM309-4	**0.0795**	2.2334	0.0056	.	0.0914	42.3	83	89
GBM396-6	**0.0774**	1.3903	0.0083	.	0.0260	5.4	541	.
GBM301-4	**0.0762**	0.1656	0.1430	.	0.0448	1.9	308	123
GBM301-10	**0.0610**	0.1226	0.0534	.	0.2262	6.5	100,060	253
GBM302-9	**0.0553**	1.2720	0.0082	.	0.0034	2.2	462	491
GBM901-5	**0.0521**	0.1520	0.0063	.	0.5189	6.0	96	43
GBM398-7	**0.0510**	0.0315	0.0192	.	0.0400	6.0	69	8
GBM904-3	**0.0489**	0.0515	0.0323	.	0.0464	1.8	270	82
GBM907-7	**0.0479**	1.4263	0.0097	.	0.0366	5.1	517	530
GBM900-2	**0.0464**	0.0859	0.0886	.	0.0334	1.3	786	61
GBM908-6	**0.0461**	0.0441	0.4736	.	0.1354	1.2	14	832
GBM303-2	**0.0424**	7.2921	0.0403	.	0.0329	26.1	697	641
GBM305-4	**0.0416**	0.1138	0.0475	.	0.1199	2.6	263	70
GBM306-8	**0.0392**	0.5868	0.1099	.	0.0791	5.6	1,410	75
GBM301-9	**0.0389**	0.2881	0.0102	.	0.7208	11.2	317	48
GBM907-8	**0.0388**	0.0339	0.4295	.	0.1234	1.0	11	219
GBM309-7	**0.0387**	0.0502	0.0422	.	0.0247	58.4	8	12
GBM908-5	**0.0378**	0.0498	0.0418	.	0.0232	57.8	8	11
GBM998-4	**0.0357**	0.7514	0.0025	.	0.0038	4.4	244	47
GBM309-6	**0.0341**	0.0277	1.6113	.	0.1344	1.2	18	909
GBM996-4	**0.0336**	0.0492	0.0036	.	0.0968	3.6	442	.
GBM300-5	**0.0322**	1.0779	0.0076	.	0.0035	3.6	571	332
GBM906-6	**0.0288**	0.0171	0.0013	.	0.0210	392.8	10	8
GBM903-5	**0.0254**	0.1424	0.1772	.	0.0689	3.3	932	50
GBM995-1	**0.0249**	0.4155	0.0026	.	0.0023	1.6	145	119
GBM303-5	**0.0245**	0.6343	0.0058	.	0.0030	2.5	111	107
GBM398-5	**0.0243**	0.1223	0.1944	.	0.0215	3.5	282	83
GBM302-5	**0.0239**	0.1059	0.0498	.	0.0359	1.8	1,873	50
GBM300-7	**0.0219**	0.0450	0.0013	.	0.0163	153.8	9	9
GBM995-4	**0.0196**	0.3497	0.0027	.	0.0018	1.5	160	.
GBM397-8	**0.0189**	0.1419	0.1320	.	0.0363	1.5	553	.
GBM995-2	**0.0162**	0.2681	0.0024	.	0.0013	1.3	142	.
GBM305-3	**0.0135**	0.0451	0.0272	.	0.0372	1.7	656	46
GBM305-9	**0.0114**	0.0565	0.2551	.	0.0104	0.8	219	47
GBM908-1	**0.0110**	0.0074	0.0053	.	0.0102	1.7	10	34
GBM905-4	**0.0108**	0.1670	0.0072	.	0.0057	0.9	814	13
GBM399-4	**0.0097**	0.0989	0.0054	.	0.0057	0.8	15	15
GBM309-1	**0.0092**	0.1554	0.0023	.	0.5239	6.0	95	22
GBM305-2	**0.0091**	0.0054	0.0045	.	0.0080	1.2	2	27
GBM303-4	**0.0084**	0.0221	0.0455	.	0.0217	21.3	276	66
GBM903-2	**0.0078**	0.0528	0.1110	.	0.0180	0.9	383	32
GBM398-2	**0.0074**	0.0235	0.0273	.	0.0105	1.0	206	22
GBM902-4	**0.0070**	0.0097	0.0032	.	0.0029	0.6	120	28
GBM305-6	**0.0069**	0.0242	0.0062	.	0.0120	1.5	315	31
GBM906-1	**0.0066**	0.0247	0.0191	.	0.0227	22.6	402	30
GBM308-15	**0.0065**	1.5595	2.3913	23.40	0.0113	4.4	.	.
GBM904-16	**0.0061**	1.1773	2.2435	.	0.0164	.	.	.
GBM904-7	**0.0056**	0.0372	0.0026	.	0.0917	1.5	64	11
GBM303-6	**0.0056**	1.3967	0.0106	.	0.0057	5.5	603	151
GBM996-6	**0.0052**	0.0025	0.0029	.	0.0032	2.0	26	.
GBM903-7	**0.0049**	0.0311	0.0021	.	0.0677	3.1	34	12

CRM MULTI-METAL ORES

analysis listed in mass percent % and mg/kg * 250 g units

Number	Pb%	Cu%	Ni%	Zn%	Ag*	As*	Co*
GBM997-9	**0.0047**	0.0485	0.0016	0.0016	0.9	5	.
GBM907-1	**0.0047**	0.1417	0.0034	0.0122	12.4	62	78
GBM303-8	**0.0046**	1.3949	0.0151	0.0045	7.0	1,152	454
GBM900-5	**0.0045**	0.3695	0.0016	0.0070	1.9	15	36
GBM907-6	**0.0045**	0.1593	0.0036	0.0091	26.8	68	74
GBM900-4	**0.0044**	0.1032	0.1294	0.0087	1.5	2,448	67
GBM998-10	**0.0041**	1.5414	2.3610	0.0090	3.5	25	1,202
GBM399-7	**0.0040**	0.0041	0.0033	0.0051	0.6	14	24
GBM302-1	**0.0038**	0.0120	0.1180	0.0230	0.9	748	159
GBM305-10	**0.0037**	0.0114	0.0604	0.0066	0.7	569	22
GBM907-2	**0.0036**	0.0990	0.0031	0.0097	11.0	41	58
GBM905-3	**0.0036**	0.0132	0.0230	0.0307	0.7	154	44
GBM907-10	**0.0035**	0.0900	0.0032	0.0115	17.9	36	54
GBM906-9	**0.0035**	0.0094	0.0071	0.0079	4.0	50	20
GBM904-10	**0.0035**	0.0162	0.2709	0.0039	0.5	35	59
GBM903-3	**0.0034**	0.0167	0.2758	0.0042	0.7	33	60
GBM398-10	**0.0034**	0.0206	0.0175	0.0134	1.9	131	48
GBM307-5	**0.0034**	0.0031	0.0029	0.0018	1.0	23	4
GBM904-2	**0.0033**	0.0150	0.0044	0.0149	6.4	28	20
GBM907-3	**0.0033**	0.0061	0.0025	0.0119	6.4	8	19
GBM308-3	**0.0033**	0.0928	0.0036	0.0109	14.5	41	63
GBM307-3	**0.0032**	0.0020	0.0021	0.0080	0.6	4	11
GBM906-2	**0.0031**	0.0569	0.1068	0.0074	10.5	11	20
GBM904-5	**0.0031**	0.1111	0.0039	0.0026	0.8	108	155
GBM305-1	**0.0029**	0.0175	0.0351	0.0217	0.6	795	46
GBM301-7	**0.0028**	0.5578	0.0029	0.0148	1.8	14	14
GBM399-2	**0.0028**	0.0205	0.0014	0.0309	0.7	4	3
GBM997-8	**0.0024**	1.2050	0.0008	0.0046	4.2	25	.
GBM905-2	**0.0023**	0.0085	0.0072	0.0131	1.6	60	25
GBM308-4	**0.0022**	0.0310	0.0032	0.0087	16.1	22	39
GBM900-6	**0.0022**	0.4651	0.0014	0.0075	2.2	14	14
GBM906-4	**0.0021**	0.0372	0.0089	0.0145	0.8	62	29
GBM908-4	**0.0021**	0.0041	0.0026	0.0085	1.9	7	18
GBM903-8	**0.0020**	0.0550	0.0177	0.0102	1.0	1,351	52
GBM397-3	**0.0019**	0.0939	0.0083	0.0070	0.8	122	.
GBM907-4	**0.0018**	0.3100	0.0171	0.0038	0.7	1,987	31
GBM908-2	**0.0018**	0.0056	0.0026	0.0070	7.2	3	21
GBM397-1	**0.0018**	0.0061	0.0573	0.0032	1.9	449	.
GBM907-5	**0.0017**	0.0078	0.0026	0.0092	12.8	5	23
GBM398-3	**0.0017**	0.0454	0.0101	0.0077	1.1	16	15
GBM901-2	**0.0016**	0.0306	0.8830	0.0125	1.2	69	314
GBM10	**0.0016**	0.0096	0.0154	0.0162	0.9	7	.
GBM997-7	**0.0016**	0.0284	0.0035	0.0037	0.8	14	.
GBM900-7	**0.0016**	0.0371	0.8625	0.0067	1.0	8	253
GBM396-8	**0.0015**	0.0246	0.4064	0.0109	1.1	110	140
GBM997-5	**0.0015**	0.0328	0.6258	0.0085	1.3	125	.
GBM399-3	**0.0015**	0.0054	0.0037	0.0066	1.0	45	21
GBM903-4	**0.0014**	0.4022	0.0053	0.0018	1.4	180	68
GBM1	**0.0014**	0.0025	0.0027	0.0022	.	32	.
GBM905-1	**0.0013**	0.0081	0.0115	0.0086	22.9	250	15
GBM999-6	**0.0013**	0.0639	0.0219	0.0087	0.9	13	23
GBM901-1	**0.0013**	0.0057	0.8037	0.0097	1.2	6	1,346
GBM302-4	**0.0013**	0.0160	0.0118	0.0085	0.8	738	21
GBM908-3	**0.0012**	0.0054	0.0025	0.0098	4.8	6	26
GBM997-1	**0.0011**	0.0014	0.0103	0.0011	6.1	74	.
GBM301-3	**0.0011**	0.0776	0.7910	0.0094	0.9	304	187
GBM908-7	**0.0011**	0.0212	0.4666	0.0117	1.0	53	229
GBM300-9	**0.0010**	0.0317	0.3765	0.0084	0.8	11	182
GBM904-1	**0.0010**	0.0077	0.0035	0.0092	0.6	7	28
GBM908-8	**0.0010**	0.0128	0.5525	0.0114	0.6	69	304
GBM900-8	**0.0010**	0.0046	3.8468	0.0053	4.7	8	50
GBM300-4	**0.0010**	0.0266	0.8118	0.0098	0.7	18	258
GBM901-4	**0.0009**	0.0946	0.0018	0.0069	0.7	6	21
GBM397-9	**0.0009**	0.0059	0.0042	0.0073	0.9	11	.
GBM998-9	**0.0009**	0.0023	0.0013	0.0027	101.9	7	8
GBM307-2	**0.0009**	0.0089	0.0034	0.0094	0.5	8	31
GBM305-5	**0.0008**	0.0194	0.1785	0.0056	0.5	67	51
GBM906-7	**0.0008**	0.0362	0.5562	0.0051	0.9	25	210
GBM907-9	**0.0008**	0.0365	0.5442	0.0053	0.8	12	305
GBM998-5	**0.0008**	0.0056	0.0025	0.0084	0.6	10	28
GBM906-8	**0.0007**	0.0250	0.5491	0.0057	0.6	5	159
GBM307-4	**0.0007**	0.0059	0.0025	0.0077	3.9	6	25
GBM305-8	**0.0005**	0.0025	0.0016	0.0040	14.6	2	12
GBM307-1	**0.0005**	0.0059	0.0027	0.0090	0.6	8	30

CRM MULTI-METAL ORE

analysis listed in mass % — SiO_2* — 200 g units

Number	Al	As	C	Ca	Co	Cu	Fe	Mg	Mn	Na	Ni	Pb	S	Si	Sn	Zn
CAN SU-1b	4.30	.	(0.04)	2.21	0.0672	1.185	25.54	1.790	0.0703	(1.6)	1.953	0.0058	14.14	15.23	.	0.0235
CAN MP-1b	.	2.30	.	2.47	.	3.069	8.19	0.024	(0.0480)	.	.	2.091	13.79	16.79*	1.61	16.67

continued — analysis listed in mg/kg except % which is mass %

Number	Ag	As	Bi	Cd	Mo	Pd	Pt	Sb	LOI	H_2O 105'C
CAN SU-1b	6.39	2.49	(2.73)	(3)	(4)	0.791	0.491	(0.2)	(8%)	(0.6%)
CAN MP-1b	47.0	.	954	527	285	.	.	(54)	.	.

CRM MULTI-METAL ORE

analysis listed in mass % except which is mg/kg — 50 g units

Number	Al_2O_3	As	CaO	Cu	Fe	K_2O	MgO	Mn	Na_2O	Pb	S	SiO_2	Zn
NCS DC73507	14.1	0.043	1.52	0.264	4.68	3.85	1.55	0.090	0.68	0.43	2.67	63.0	0.83
NCS DC73508	11.2	0.28	4.7	1.05	8.4	3.1	1.39	0.38	0.25	2.17	6.74	47.9	4.26
NCS DC73509	7.8	0.026	17.2	2.80	11.40	1.79	2.33	0.24	0.54	0.056	5.95	40.6	0.143
NCS DC73510	(2.5)	0.15	6.5	0.096	19.6	0.78	0.59	0.066	(0.03)	5.13	29.0	14.1	13.9
NCS DC73511	1.25	0.17	1.96	24.2	29.6	0.32	0.31	0.010	0.052	0.040	33.7	3.78	(0.057)
NCS DC73513	0.57	0.064	(0.96)	0.138	6.39	(0.18)	(0.08)	0.025	.	1.44	32.0	3.24	52.7
NCS DC73512	(0.27)	0.173	(0.2)	0.028	12.0	(0.06)	(0.033)	(0.003)	(0.012)	57.1	23.7	0.68	3.3

continued — analysis listed in mg/kg except

Number	Ag	Bi	Cd	Ga	Ge	Hg	In	Mo	Re	Sb	Se	Sn	Te	Tl	W
NCS DC73507	18.3	2.8	32	23.4	2.9	4.2	(1.5)	28	.	94	2.3	.	(0.3)	1.2	(10)
NCS DC73508	220	75	172	26	6.5	17	10	24	.	(610)	(5.8)	(20)	(1.3)	(1.1)	25
NCS DC73509	1010	86	7.4	15	3.3	.	3.3	137	(0.24)	95	24	9.7	(1.8)	(1.0)	56
NCS DC73510	148	(5)	400	62	25	114	(7.5)	(1.9)	.	260	.	.	.	(0.3)	(1.9)
NCS DC73511	43.6	(140)	(4)	.	.	.	(1.5)	224	(3.5)	1400	(80)	.	(4)	.	(3)
NCS DC73513	217	.	1290	180	118	560	(1.7)	.	.	132	(0.3)	.	.	.	(0.7)
NCS DC73512	626	(2)	90	(11)	**3.4**	**46**	.	**(4)**	.	**890**	**(4.7)**	.	.	.	**(0.7)**

CRM NICKEL ORE

analysis listed in mass % — GBM: 250 g — IGS: 50 g

Number	Ni%	Co	Cu%	Fe.Tot	Pb%	S%	Zn%
GBM307-12	**5.1565**	**.**	**0.2157**	**.**	**0.0173**	**8.79**	**0.0509**
GBM907-11	**4.5862**	**.**	**0.3951**	**.**	**0.0200**	**7.71**	**0.1097**
GBM903-11	**4.3030**	**.**	**0.4100**	**.**	**0.0115**	**.**	**0.0247**
GBM305-13	**2.9709**	**.**	**0.6891**	**.**	**0.0054**	**.**	**0.0139**
GBM307-13	**1.9995**	**.**	**0.1251**	**.**	**0.0045**	**6.78**	**0.0117**
IGS 21	**1.97**	**0.069**	**0.798**	**23.40**	**.**	**.**	**.**
GBM907-12	**1.8948**	**.**	**0.0837**	**.**	**0.0068**	**2.89**	**0.0274**
GBM907-15	**1.6470**	**.**	**0.0290**	**.**	**0.0361**	**2.84**	**0.1396**
GBM907-16	**1.1511**	**.**	**0.0163**	**.**	**0.0105**	**0.79**	**0.0674**
GBM307-11	**1.1284**	**.**	**0.0465**	**.**	**0.0055**	**1.94**	**0.0200**
GBM904-15	**0.8136**	**.**	**0.0090**	**.**	**0.0033**	**.**	**0.0107**
GBM305-16	**0.6503**	**.**	**0.0381**	**.**	**0.0026**	**.**	**0.0092**

RM NIOBIUM ORE

analysis listed in mass % 100g units

Number	Nb_2O_5	Al_2O_3	BaO	CO_2	CaO	CeO_2	F	Fe	K_2O	La_2O_3	MgO	MnO	Na_2O	Nd_2O_3	P2O5
FQZ 1807	61.95	0.382	0.192	0.056	13.18	0.567	4.12	2.29	0.320	0.150	0.150	0.310	5.42	0.209	0.112
DH X1803	60.62	0.291	0.201	0.097	13.02	0.556	3.65	3.50	0.233	0.153	0.136	0.325	5.28	0.207	0.102
FQZ 1808	56.71	0.614	0.277	0.139	11.67	0.588	4.02	5.41	0.463	0.185	0.177	0.383	4.73	0.214	0.134
DH X1804	1.32	1.31	0.0550	28.27	28.20	0.175	.	7.86	0.522	0.089	12.93	0.803	0.146	0.0722	5.20
DH X1805	0.973	2.07	0.055	27.13	27.16	0.128	.	7.37	1.03	0.059	12.48	0.794	0.173	0.059	5.78
DH X1801	0.696	2.61	0.154	29.95	26.86	0.096	.	5.68	1.38	0.042	13.53	0.825	0.142	0.051	3.84
DH X1802	0.200	2.67	0.162	30.16	26.96	0.098	.	5.72	1.41	0.041	13.51	0.827	0.109	0.049	3.92
DH X1806	0.095	0.945	0.046	36.82	27.77	0.086	.	5.44	0.525	0.040	16.16	1.12	0.061	0.038	1.75

continued

Number	S	SiO_2	SnO_2	SrO	Ta_2O_5	ThO_2	TiO_2	U_3O_8	V_2O_5	Y_2O_3	ZnO	ZrO_2	$-H_2O$ 900'C
FQZ 1807	0.052	2.28	.	1.18	0.276	0.734	3.86	0.190	0.056	0.098	0.005	0.868	0.611
DH X1803	0.051	1.91	.	1.20	0.273	0.770	4.26	0.202	0.073	0.085	0.001	0.847	.
FQZ 1808	0.056	3.52	.	1.31	0.265	0.802	3.92	0.153	0.075	0.074	0.003	0.837	0.668
DH X1804	1.02	5.18	0.0014	0.217	0.0048	0.025	0.287	0.0032	0.0431	0.0213	0.0138	0.146	1.15
DH X1805	0.899	7.82	.	0.164	(0.004)	0.032	0.295	(0.007)	0.046	0.035	0.017	0.218	.
DH X1801	0.680	8.75	.	0.123	0.005	0.018	0.266	0.002	0.028	0.017	0.043	0.094	.
DH X1802	0.616	8.91	.	0.116	0.002	0.010	0.237	0.002	0.027	0.016	0.039	0.074	.
DH X1806	0.798	3.38	.	0.274	(0.001)	0.010	0.089	(0.002)	(0.009)	(0.009)	0.013	0.027	.

CRM NIOBIUM ORE

certified analysis | analysis listed in mass % | informational values | 200 g units

Number	Nb	Al	Ca	Fe	K	Mg	Mn	Na	P	Pb	S	Si	Sr	Zn	LOI
CAN OKA-1	0.37	0.9	31.3	2.8	0.3	1.3	1.1	0.2	1.1	1.1	0.6	2.4	1.0	0.05	31.9

CRM NOBLE METAL ORE

analysis listed in mg/kg

Number	Ag	Au	Ir	Ni	Os	Pd	Pt	Rh	Ru	S	Units	Notes
NCS DC73357	.	(45)	28	.	15.6	568	440	22	13	.	500 g or 1 kg	
NCS DC73353	.	10	0.05	.	0.06	2.3	1.6	.	.	.	500 g or 1 kg	
CAN PTM-1a	(135)	3.30	(0.35)	.	.	10.01	7.31	(0.92)	(0.7)	.	400 g	
NCS DC73355	.	4.3	4.7	.	2.4	60	58	4.3	2.5	.	500 g or 1 kg	
NCS DC73358	.	(1.8)	1.2	.	0.64	15.2	14.7	1.1	0.66	.	500 g or 1 kg	
CAN PTC-1a	56.0	1.31	.	.	.	4.48	2.72	0.33	.	.	200 g	
NCS DC73354	.	1.1	4.3	.	9.6	4.6	6.4	1.3	14.8	.	500 g or 1 kg	
NCS DC73352	.	0.9	0.032	.	0.051	0.26	0.26	.	.	.	500 g or 1 kg	
SARM 66	.	0.66	7.1	.	.	51.1	91.2	17.5	26.5	.	500 g	PGM+Au: 161.1 ppm
SARM 76	.	(0.23)	(0.14)	0.1895	.	1.53	3.59	0.256	0.49	0.408	3 kg	
SARM 72	.	0.13	(0.28)	.	.	4.24	3.97	0.83	1.18	.	2.5 kg	
SARM 71	.	0.053	0.17	.	.	1.67	2.08	0.43	0.74	.	2.5 kg	
SARM 75	.	(0.053)	.	0.23	.	0.61	0.32	.	.	(0.39)	3 kg	
SARM 81	.	(0.034)	(0.18)	.	.	1.46	2.50	0.490	(0.76)	.	500 g or 3 kg	
SARM 64	.	0.018	0.052	.	.	0.210	0.475	0.080	0.240	.	500 g or 3 kg	Chromatite Ore
NCS DC73356	.	.	136	.	353	11.3	20	10	527	.	500 g or 1 kg	
CAN PTA-1	.	.	.	.	.	.	3.05	.	.	.	400 g	

CRM NOBLE METAL ORE

analysis listed in ppb (ng/g) | mass % except * which is mg/kg

GPP: 1 kg units NCS: 500 g or 1 kg | CAN WMS-1A: 200 g other CAN: 400 g

Number	Au	Ir	Os	Pd	Pt	Rh	Ru	Al_2O_3	As*	Cr*	Cu	Fe_2O_3	K_2O	La*	MnO	Na_2O	Sb*	Other
GPP-01	905	.	.	734	965	.	.	.	.	.	.	.	.	.	.	.	.	
GPP-02	929	.	.	523	505	.	.	.	.	.	.	.	.	.	.	.	.	
CAN WMS-1A	300	(322)	(150)	1450	1910	222	(145)	Al:1.350	30.9	(68)	1.396	45.4 Fe	.	(4.3)	.	.	.	S: 28.17
CAN WMG-1	110	46.4	.	382	731	26.3	34.7	8.32	7	.	.	17.52	0.09	8.2	0.151	0.174	1.8	Zn*: 110
CAN UMT-1	48	8.8	.	106	128	9.5	10.9	.	.	.	.	.	.	.	.	.	.	
CAN WPR-1	42.2	13.5	.	235	285	13.4	21.6	.	.	.	0.164	14.6	0.12	.	0.166	.	.	TiO_2: 0.29
CAN TDB-1	6.3	.	.	22.4	5.8	.	.	.	.	.	.	.	.	.	.	.	.	
CAN WGB-1	2.9	(0.33)	.	13.9	6.1	(0.32)	(0.3)	.	.	291	.	6.71	0.94	.	.	.	.	MgO: 9.40
NCS DC73397	(2.3)	0.16	0.25	0.66	0.66	0.066	0.43	.	.	.	.	.	.	.	.	.	.	
NCS DC73398	.	28	43	570	1900	7.3	74	.	.	.	.	.	.	.	.	.	.	
NCS DC73399	.	2.1	(2)	1670	5700	1.5	(2)	.	.	.	.	.	.	.	.	.	.	

CRM NORITE

analysis listed in mass % — 100 g units

Number	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SiO_2	TiO_2
SARM 4	16.50	11.50	7.47	(0.8)	0.25	7.50	0.18	2.46	52.64	0.20

CRM OBSIDIAN

analysis listed in mass % — 35 g units

Number	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
SRM 278	14.15	0.983	1.36	2.04	4.16	(0.23)	0.052	4.84	0.036	73.05	0.245

analysis listed in mg/kg

Number	Cu	Ni	Pb	Rb	Sr	Th	Ti	U
SRM 278	5.9	3.6	16.4	127.5	63.5	12.4	0.54	4.58

RM OLIVINE

typical analysis listed in mass % — 100 g units

Number	MgO	SiO_2	Fe	Fe_2O_3	Al_2O_3	C tot	CO_2	CaO	Co_3O_4	Cr_2O_3	K_2O	Mn_3O_4	Na_2O	NiO	P_2O_5	TiO_2	$-H_2O$ at 900'C
DH 4912	49.18	41.6	5.07	.	0.432	0.054	0.046	0.081	0.016	0.383	0.014	0.103	.	0.354	.	0.002	1.25
DH 4911	47.37	42.63	5.52	.	0.95	.	.	0.491	0.019	0.425	0.024	0.118	.	0.340	<0.01	0.013	.

CRM OOZE

analysis listed in mass % — 50 g units

Number	Type	SiO_2	Al_2O_3	Ba	CO_2	CaO	Ce	Cr	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
VS 5369-90	Volcanogeous	43.50	14.37	0.13	2.40	7.63	0.005	0.026	2.9	11.82	1.34	4.58	0.265	4.00	0.27	2.30	9.2
VS 5370-90	Calcerous	11.90	3.60	0.010	32.20	39.23	.	0.0034	0.17	2.44	0.51	3.44	0.218	1.86	0.23	0.30	36.6

continued — analysis listed in mass %

Number	Cu	Ni	S	Sn	Sr	V	Zn	Zr
VS 5369-90	0.018	0.015	0.17	0.00033	0.051	0.020	0.013	0.017
VS 5370-90	0.0030	0.0038	0.19	0.021	0.12	0.0057	0.010	0.008

analysis listed in mg/kg

Number	Be	Co	Ga	La	Li	Mo	Pb	Rb	Sc	Th	Y
VS 5369-90	1.8	46	12	25	35	1.7	18	37	26	5	33
VS 5370-90	1.0	12	5	7	13	4	11	11	6	3	9

CRM PERIDOTITE

analysis listed in mass %

Number	SiO_2	Si	Al_2O_3	CO_2	CaO	Fe	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O+	H_2O-	K_2O	Mg	MgO	MnO	Na_2O	TiO_2
VS 2111-81	45.54	.	1.84	0.69	1.26	.	8.83	.	11.58	.	.	0.044	.	37.12	0.183	0.105	0.107
JP-1	42.38	19.81	0.66	.	0.55	5.85	5.99	1.98	8.37	2.39	0.44	0.003	26.9	44.60	0.121	0.021	.

continued — analysis listed in mg/kg except % which is mass %

Number	Al%	As	Ba	Ca	Co	Cr%	Cu	Ga	Ge	Hf	K%	La	Mn%	Mo	Na%
VS 2111-81	.	.	66	.	159	0.320	140	5.9	1.6	.	.	.	.	1.3	.
JP-1	0.35	0.34	19.5	0.39	116	0.2807	6.72	.	.	0.20	0.002	0.084	0.094	.	0.02

Number	Nb	Ni%	Pb	S%	Sc	Sm	Sn	Th	U	V	Yb	Zn	Zr	Units
VS 2111-81	.	0.160	6.7	0.030	11.3	.	3.2	.	.	39	1.5	137	21	40 g
JP-1	1.48	0.2460	.	.	7.24	0.019	.	0.19	0.036	27.6	0.022	41.8	5.92	20 g

CRM PHOSPHATE ROCK

* CaO+SrO ** AFPC Method (s) indicates soluble form analysis listed in mass % SRM: 90 g units all others: 100 g units

Number	P_2O_5	CaO	Al_2O_3	CO_2	F	Fe_2O_3	T.Fe_2O_3	I	K_2O	MgO	MnO	Na_2O	S	SO_3	SiO_2	SrO	TiO_2
SARM 32	39.96	54.44	(0.05)	1.61	2.49	0.14	.	.	.	0.50	.	.	.	.	(0.4)	0.52	.
GBW 07210	36.89	51.32*	0.58	2.15	3.54	.	1.04	0.0052	0.17	0.43	0.024	0.33	.	.	3.26	0.077	0.037
IPT 18B	35.7	52.6	0.31(s)	.	1.33	0.21(s)	.	.	0.21(s)	1.65(s)	.	0.14(s)	.	.	1.15	0.48(s)	.
SRM 120c	33.34**	48.02**	1.30	3.27**	3.82**	1.08	.	.	0.147	0.32**	0.027	0.52	(0.37)	.	5.5**	(0.1)	0.103
BCR 032	32.98	51.76	0.55	5.10	4.04	0.231	.	.	.	0.403	.	.	.	1.84	2.09	.	.
SRM 694	30.2	43.6	1.8	.	3.2	0.79	.	.	0.51	0.33	0.0116	0.86	.	.	11.2	.	(0.11)
USZ 14-94	26.38	38.85	0.85	5.84	.	.	0.63	.	0.092	2.26	.	.	.	.	20.57	.	LOI:6.43
GBW 07211	20.86	40.71*	2.58	18.46	2.05	.	1.08	0.0059	0.28	8.19	0.015	0.059	0.79	.	3.61	0.16	0.14
USZ HF	13.81	33.80	.	.	.	.	0.37	.	0.077	8.30	.	0.12	.	.	28.04	.	.
GBW 07212	6.06	19.42*	4.06	16.41	0.51	.	3.08	.	2.63	7.12	0.026	0.14	.	.	38.80	0.055	0.48

continued analysis listed in mass % | analysis listed in mg/kg

Number	CdO	U	U_3O_8	V_2O_3	V_2O_5	As	B	Cd	Cl	Co	Cr	Cu	Hg	Mn	Ni	Ti	V	Zn
SARM 32	.	.	.	.	.	.	.	.	(640)	.	.	.	.	.	.	.	.	.
GBW 07210	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
IPT 18B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SRM 120c	.	.	0.0135	0.016	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BCR 032	.	.	.	.	.	9.5	22.6	20.8	.	0.59	257	33.7	0.0551	18.8	34.6	171	153	253
SRM 694	0.015	0.01414	.	.	0.31	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 14-94	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07211	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ HF	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07212	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM POLYMETALLIC NODULE

analysis in mass % NCS: 70 g NM: 100 g units

Number	SiO_2	Al_2O_3	Ba	C(org)	CO_2	CaO	Cl	Cu	Fe(t)	H_2O+	K_2O	MgO	Mn(t)	MnO_2	Na_2O	P_2O_5	SO_3	TiO_2	LOI
NM 2388	16.07	.	.	.	.	.	.	0.49	14.94	.	.	.	21.28	.	.	.	.	.	.
GBW 07295	15.45	5.2	0.18	(0.09)	(0.3)	2.67	0.73	0.69	10.87	(8.5)	1.08	3.03	24.7	37.8	2.56	0.58	(0.35)	1.37	(15.3)
GBW 07296	12.3	4.7	0.24	(0.08)	(0.21)	2.25	0.80	1.36	4.70	(8.1)	1.14	3.56	32.2	49.3	3.03	0.37	(0.27)	0.54	(15.8)

continued analysis listed in mg/kg except % which is mass %

Number	As	B	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Dy	Er	Eu	F%	Ga	Gd	Hf	Hg	Ho	La	Li	Lu
NM 2388	.	.	.	.	.	.	.	0.14%	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07295	105	174	3.5	15	23	10	620	0.29	17	0.84	42	21	11	0.04	27	48	10	0.20	8.2	184	78	2.9
GBW 07296	53	102	2.0	5	25	23	249	0.17	18	1.2	27	13	7.6	0.03	38	28	3.9	0.5	5.1	96	205	1.8

continued

Number	Mo	Nb	Nd	Ni%	Pb	Pr	Rb	Sb	Sc	Sm	Sr	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NM 2388	.	.	.	0.71	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07295	473	48	198	1.02	709	49	16	31	13	46	869	7.6	26	150	3.1	6.2	456	67	133	20	918	618
GBW 07296	622	21	121	1.55	328	29	17	46	9.4	31	561	4.6	15	167	1.9	3.8	442	61	84	12	1600	256

CRM PROPHILITE

analysis listed in mass % 50 g units

Number	Al_2O_3	CaO	Fe_2O_3	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
JCRM R802	32.3	0.04	0.23	.	.	0.07	<0.01	.	0.09	0.05	.	60.7	0.19	6.0
NCS DC60127	23.58	0.17	.	1.94	4.15	0.38	0.087	0.0037	0.34	0.20	0.61	66.84	0.70	5.48
NCS DC60128	22.20	0.066	.	0.22	5.57	0.028	0.041	0.0040	0.043	0.11	0.17	70.34	0.18	6.34

CRM PYROXENITE

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	Cr_2O_3	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SiO_2	TiO_2
SARM 5	4.18	2.66	3.50	10.59	0.87	0.09	25.33	0.22	0.37	51.10	0.20

CRM QUARTZ

analysis listed in mass % T = Total SARM: 100 g SRM: 5 g US: 30 g

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	Fe_2O_3T	K_2O	MgO	Mn	Na_2O	P_2O_5	TiO_2	Respirable Crystalline Alpha Phase
SARM 49	99.6	(0.05)	(0.01)	.	(0.05)	.	(0.01)	(0.05)	(0.01)	(0.05)	.	(0.01)	.
US QLO-1	65.6	16.2	3.17	2.97	1.02	4.35	3.60	1.00	.	4.20	0.25	0.62	.
SRM 1878a	.	.	.	.	.	.	.	.	.	.	.	.	93.7 +/- 0.21%
SRM 1879a	.	.	.	.	.	.	.	.	.	.	.	.	88.2 +/- 0.40%

continued analysis, for SARM and US only, listed in mg/kg

Number	Ag	As	B	Ba	Br	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ge	La	Li	Lu
SARM 49	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US QLO-1	0.064	(3.5)	36	1370	(2.1)	54	220	7.2	3.2	1.8	29	3.8	2.3	1.43	280	(1.3)	27	25	0.37

Number	Mo	Nb	Nd	Pb	Rb	S	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr
SARM 49	.	.	.	.	.	.	.	.	(5)	.	.	.	.	.	.	.	.	.	.	.
US QLO-1	2.6	10	(26)	20	74	(30)	4.9	2.3	340	0.82	0.71	4.5	0.37	1.9	54	0.58	24	2.3	61	185

CRM RARE EARTH ORE

RE_xO_y = Total Rare Earths % = mass percent, * = mg/kg 100 g units

Number	RE_xO_y %	As%	Ba%	Ce%	Co*	Cr	Cs*	Cu*	Dy*	Er*	Eu*	Ga	Gd*	Hf	Ho*	La%	Li*	Lu*	Mo*	Nb*
USZ 42-2006	8.27	224	307	2.76	7.89	(34)	(55)	27.37	57.63	(23.88)	87.22	.	(295)	.	7.86	2.11	21.78	.	34.40	31
USZ 25-2006	7.56	156	917	2.90	32.46	.	.	128	206	79.50	211	.	553	.	36.60	1.93	.	7.64	(23.86)	.
USZ 44-2007	.	43.70	95	0.10	(13.31)	200	10.5	13	165	(112)	8.3	64	117	400	37	0.0434	37	.	(12.60)	.

continued analysis listed in mass % and mg/kg *

Number	Nd%	Ni*	Pb%	Pr%	Rb*	Sm%	Sn%	Sr%	Sn%	Ta%	Tb*	Th*	U*	V*	W*	Y*	Yb	Zn%	Zr%
USZ 42-2006	0.65	13.18	0.16	0.23	67.12	0.0539	.	0.49	.	.	(45)	946	(52)	115	(19)	167	17.85*	0.0469	(0.01)
USZ 25-2006	0.88	70.80	0.11	0.28	43	0.09	.	2.24	.	.	54.60	217	.	138.6	.	959	54.52*	0.06	.
USZ 44-2007	0.0434	(10.40)	0.0149	0.0122	64.1	0.0120	0.0126	0.0158	0.0126	0.0123	25	202	57	.	88	1102	0.0123%	0.0534	1.58

continued analysis listed in mass %

Number	Al_2O_3	CO_2	CaF_2	CaO	F%	FeO	Fe_2O_3	H_2O-	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
USZ 42-2006	2.72	29.00	.	32.68	(1.61)	(0.08)	5.71	(0.19)	(2.03)	1.55	2.78	1.67	0.25	0.22	(0.14)	11.86	0.20	30.56
USZ 25-2006	2.47	1.04	(32.90)	25.51	(1.89)	0.14	13.45	(0.67)	.	0.91	0.50	0.14	0.92	19.26	4.58	14.86	0.15	6.78
USZ 44-2007	10.93	.	(2.20)	2.03	(0.92)	(0.36)	3.38	(0.18)	(0.68)	3.70	(0.05)	0.06	3.46	(0.03)	.	71.38	0.31	1.64

CRM RARE EARTH ORE

analysis listed in mass %

Number	RE_xO_y	Al_2O_3	CaO	F-	FeO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
NCS DC86318	4.30	(14.26)	0.29	0.017	0.20	2.24	3.60	5.52	(0.11)	0.052	0.66	(0.020)	66.9	0.17	5.43
NCS DC86317	1.83	16.59	(0.11)	0.15	0.18	0.71	4.63	4.03	0.13	0.10	0.13	(0.0073)	70.92	(0.018)	5.42
NCS DC86312	0.784	19.00	0.029	0.014	(0.072)	3.46	6.64	2.11	0.231	0.069	0.064	(0.029)	66.72	0.530	6.80
NCS DC86311	0.486	14.65	(0.031)	0.034	(0.039)	1.13	3.61	4.92	0.080	0.016	0.155	(0.0025)	74.34	(0.023)	3.70
NCS DC86310	0.085	14.70	(0.026)	0.034	0.054	1.15	3.61	4.98	0.077	0.017	0.158	(0.0027)	74.55	0.022	3.77
NCS DC86309	0.092	19.04	(0.033)	0.016	(0.071)	3.49	6.64	2.13	0.229	0.070	0.062	0.029	67.28	0.537	6.73

Number	CeO_2	Cs_2O	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Li_2O	Lu_2O_3
NCS DC86318	0.053	0.00126	0.37	0.20	0.00219	0.25	(0.064)	0.23	0.0121	0.030
NCS DC86317	0.021	0.0148	0.12	0.068	0.000956	0.091	(0.023)	0.25	0.0396	0.00645
NCS DC86312	0.023	0.00055	0.021	0.011	0.00750	0.026	0.00409	0.277	0.00398	0.00136
NCS DC86311	0.00348	0.00178	0.036	0.022	0.00018	(0.027)	0.00750	0.011	0.015	0.00304
NCS DC86310	0.00217	0.00177	0.00563	0.00364	0.000036	0.00324	0.00120	0.00200	0.015	0.00055
NCS DC86309	0.00915	0.00056	0.00273	(0.0016)	0.00081	0.00317	0.00057	0.031	0.00403	0.00020

Number	Nd_2O_3	Pr_6O_{11}	Rb_2O	Sc_2O_3	Sm_2O_3	Tb_4O_7	Th	Tm_2O_3	Y_2O_3	Yb_2O_3	Units
NCS DC86318	0.40	0.089	0.0404	0.00072	0.20	0.055	0.00670	0.031	2.16	0.21	100 g
NCS DC86317	0.24	0.066	0.12	0.00101	0.066	0.019	0.00210	0.00829	0.80	0.051	100 g
NCS DC86312	0.186	0.054	0.011	0.00118	0.033	0.00407	0.00236	0.00151	0.124	0.0100	70 g
NCS DC86311	0.022	(0.0045)	0.067	0.00089	0.015	0.00577	0.00390	0.00316	0.303	0.022	70 g
NCS DC86310	0.00276	0.00063	0.069	0.00095	0.00157	0.00082	0.00405	0.00057	0.057	0.00366	70 g
NCS DC86309	0.017	0.00492	0.012	0.00113	0.00338	0.00054	0.00245	0.00024	(0.018)	0.00141	70 g

CRM RHYOLITE

analysis listed in mass %

Number	SiO_2	Al	Al_2O_3	CO2	CaO	Fe_2O_3	FeO	T.Fe_2O_3	H_2O		K	K_2O	MgO	MnO	Na_2O	P_2O_5	Si	TiO_2
JR-2	75.69	6.73	12.72	.	0.50	0.27	0.44	0.77	+1.19	-0.22	3.69	4.45	0.04	0.112	3.99	0.012	35.38	0.07
JR-1	75.45	6.79	12.83	.	0.67	0.35	0.49	0.89	+1.16	-0.20	3.66	4.41	0.12	0.099	4.02	0.021	35.27	0.11
GBW 07113	72.78	.	12.96	0.52	0.59	1.14	1.86	.		1.18	.	5.43	0.16	0.14	2.57	0.045	.	0.30
JR-3	72.76	.	11.90	.	0.093	2.61	1.86	4.72		.	.	4.29	0.050	0.083	4.69	0.017	.	0.21

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	As	Au*	B	Ba	Be	Bi	C	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er
JR-2	.	19.2	0.13	145	39.5	3.75	0.62	.	0.36	0.023	38.8	.	0.46	3.10	25.0	1.36	6.63	4.36
JR-1	.	16.3	0.25	117	50.3	3.34	0.56	70.8	0.48	0.026	47.2	920	0.83	2.83	20.8	2.68	5.69	3.61
GBW 07113	0.08	0.7	.	3.5	506	4.09	0.60	.	.	0.14	163	.	2.40	7.3	3.34	10.9	8.19	4.31
JR-3	.	.	.	.	65.8	7.6	.	.	.	.	327	.	0.98	3.5	1.0	2.9	.	.

Number	Eu	F%	Fe%	Ga	Gd	Ge	Hf	Hg*	Ho	In	La	Li	Lu	Mg%	Mn%	Mo	Na%	Nb	Nd
JR-2	0.14	0.1109	0.54	17.9	5.83	.	5.14	.	1.39	.	16.3	79.2	0.88	0.02	0.087	3.35	2.96	18.7	20.4
JR-1	0.30	0.0991	0.62	16.1	5.06	1.88	4.51	.	1.11	.	19.7	61.4	0.71	0.07	0.077	3.25	2.98	15.2	23.3
GBW 07113	1.18	0.13	.	20.5	9.47	1.17	10.8	5	1.64	0.09	82.7	12.7	0.67	.	.	2.46	.	34.3	64.5
JR-3	0.53	.	.	36.6	.	.	40.3	.	.	.	179	.	2.8	.	.	0.49	.	510	107

Number	Ni	P%	Pb	Pr	Rb	S%	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Th	Ti%	Tl
JR-2	.	0.005	21.5	4.75	303	.	1.51	5.59	.	5.63	3.51	8.11	2.29	1.10	31.4	0.04	1.85
JR-1	.	0.009	19.3	5.58	257	13.3	1.19	5.07	.	6.03	2.86	29.1	1.86	1.01	26.7	0.066	1.56
GBW 07113	64.5	.	33.3	18.4	213	0.009	0.38	5.15	0.040	11.7	3.35	43.0	2.41	1.51	27.1	.	0.83
JR-3	.	.	32.8	33.1	453	.	.	0.50	.	21.3	17.4	10.4	36.8	4.29	112	.	.

Number	Tm	U	V	W	Y	Yb	Zn	Zr	Units
JR-2	0.74	10.9	3.00	.	51.1	5.33	27.8	96.3	20 g
JR-1	0.67	8.88	7.0	1.59	45.1	4.55	30.6	99.9	100 g
GBW 07113	0.73	4.83	3.8	1.10	42.5	4.51	86.3	403	100 g
JR-3	.	21.1	4.2	.	166	20.3	209	1494	100 g

RUTILE

= class, where 1 = CRM and 2 = RM analysis listed in mass % DSZU: 20 or 100 g DH, SARM: 100 g IGS: 45 g SRM: 90 g

#	Number	TiO_2	Ti	Al_2O_3	CO_2	CaO	Cr_2O_3	Fe_2O_3	K_2O	Mn_3O_4	MoO_3	Na_2O	Nb_2O_5	P_2O_5	SiO_2	V_2O_5	ZrO_2	-H_2O@900'C
1	SRM 670	96.16	.	.	.	.	0.23	0.86	.	.	.	.	.	.	0.51	0.66	0.84	.
2	DH 5804	95.78	.	0.249	0.017	0.011	0.164	0.989	.	0.008	.	.	0.369	0.017	0.587	0.581	0.885	0.250
1	DSZU 123.48-05	95.2	.	0.27	.	.	.	1.43	.	.	.	. SO3:	0.0100	0.036	1.28	.	1.07	.
2	DH 5802	93.76	.	0.449	0.001	0.048	0.113	0.629	.	.	.	.	0.297	0.025	2.04	0.454	1.60	0.245
1	SARM 61	93.3	.	0.93	.	(0.09)	0.11	0.68	.	.	.	.	(0.30)	(0.03)	2.03	0.42	(1.34)	.
2	DH 5803	91.56	.	0.668	0.025	0.131	0.213	1.22	0.067	0.056	0.014	0.021	0.303	0.077	3.06	0.455	1.73	0.325
1	IGS 32	.	57.19	.	.	.	.	.	.	.	.	. Nb:(0.27)		.	.	.	.	.

CRM SANDSTONE

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
VS 2887-84	67.77	11.91	2.61	3.34	0.039	3.10	4.08	1.71	1.55	0.146	3.25	0.115	0.22	0.54
VS 2888-84	(66.14)	(11.49)	(3.05)	(3.78)	(0.039)	(3.16)	(4.17)	(1.82)	(1.49)	(0.16)	(2.98)	(0.12)	0.60	(0.48)
VS 2889-84	61.68	10.96	3.15	4.10	0.037	2.96	3.77	1.79	1.36	0.136	3.09	0.107	1.81	0.44
KZ 8077-94	.	.	.	.	.	.	.	.	.	.	.	.	0.33	.
KZ 8076-94	.	.	.	.	.	.	.	.	.	.	.	.	.	.

continued

Number	Cu	Pb	Zn	Cd	Ag	Re	Units
					mg/kg		
VS 2887-84	0.55	0.037	0.011	.	9.3	0.61	50 g
VS 2888-84	1.55	0.103	0.023	.	25.9	1.65	50 g
VS 2889-84	3.16	1.90	0.80	0.0071	35.0	4.7	50 g
KZ 8077-94	0.11	.	.	.	10.2	0.14	100 g
KZ 8076-94	0.036	.	.	.	0.64	0.023	100 g

CRM SANDSTONE

analysis listed in mass % — 70 g units

Number	SiO_2	Al_2O_3	C(org)	C(tot)	CO_2	CaO	F	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	Na_2O	P	Ti	Zr	LOI
GBW 07106	90.36	3.52	(0.05)	(0.10)	(0.19)	0.30	0.0183	0.61	3.22	1.01	0.65	0.082	0.061	0.0970	0.1580	0.0214	1.10

continued — analysis listed in mg/kg except * which is ng/g

Number	Ag	As	Au*	B	Ba	Be	Bi	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf
GBW 07106	0.062	9.1	(1.8)	34	143	0.97	0.18	0.060	48	(44)	6.4	20	1.8	19	4.1	2.0	1.02	5.3	4.5	1.16	6.6

Number	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Pb	Pr	Rb	S	Sb
GBW 07106	0.008	0.75	(0.2)	(0.026)	21	11.1	0.30	155	0.76	5.9	21	16.6	7.6	5.4	29	860	0.60

Number	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn
GBW 07106	4.2	0.08	4.7	1.1	58	0.38	0.79	0.038	7.0	0.36	0.32	2.1	33	1.2	21.5	1.9	20

CRM SCHIST

analysis listed in mass % — UL: 20 g units — US: 30 g units

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	Fe_2O_3T	K_2O	MgO	MnO	Na_2O	P_2O_5	Sr	TiO_2	V	Zn	Zr	LOI
US SDC-1	65.8	15.8	1.40	3.93	2.62	6.32	3.28	1.69	.	2.05	0.16	0.0180	1.01	0.0102	0.0103	0.0290	.
UL SBO 1	55.16	18.24	1.76	(5.61)	7.15	.	3.55	(1.97)	0.18	0.66	0.17	0.0150	0.94	0.0153	0.0082	0.0183	9.67

continued — analysis listed in mg/kg

Number	As	B	Ba	Be	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd	Hf	Hg	Ho	La	Li
US SDC-1	0.22	(13)	630	3	93	(32)	18	64	4	30	(6.7)	(4.1)	(1.7)	600	21	7	8.3	(0.2)	(1.5)	42	34
UL SBO 1	(32)	.	549	(3.2)	101	.	22	116	(6.8)	33	(5.1)	(3.4)	1.64	.	(23)	6.2	5	.	(1.3)	48	.

Number	Lu	Mn	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sn	Ta	Tb	Th	Tl	Tm	U	W	Y	Yb
US SDC-1	.	880	(21)	40	(38)	25	.	127	0.54	17	8.2	3.0	(1.2)	(1.2)	12	(0.7)	(0.65)	3.1	(0.80)	.	(4)
UL SBO 1	0.49	.	17	42	60	27	11.1	163	.	17	7.8	.	1.4	1	15.2	.	(0.43)	3.1	.	32	3.2

CRM LAKE SEDIMENT

analysis listed in mass % AE: 25 g BCR: 30 g CAN, JLk: 100 g NCS: 70 g

Number	Al_2O_3	C	CaO	Fe	FeO	Fe_2O_3	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	S	TiO_2	LOI	Other
JLk-1	16.73	.	0.686	.	2.191	4.251	6.372	3.701	2.805	1.736	0.266	1.051	0.208	57.16	0.1052	0.668	.	T.Fe_2O_3: 6.929
NCS DC73372	13.3	.	5.0	.	.	4.8	.	.	1.98	1.52	.	1.28	.	61.7	0.0240	.	(9.5)	CO_2: 2.9
CAN LKSD-2	12.3	4.5	2.2	4.3	.	6.2	.	2.23	2.6	1.7	0.3	1.9	0.3	58.9	1.04	0.6	12.3	
CAN LKSD-3	12.5	4.5	2.3	4.0	.	5.7	.	2.07	2.2	2.0	0.2	2.3	0.2	58.5	0.14	0.5	11.8	
CAN LKSD-1	7.8	12.3	10.8	2.8	.	4.1	.	2.92	1.1	1.7	0.1	2.0	0.2	40.1	1.57	0.5	23.5	SO_4: 1.6
CAN LKSD-4	5.9	17.7	1.8	2.8	.	4.1	.	6.55	0.8	0.9	0.1	1.8	0.3	41.6	0.99	0.4	40.8	
AE SL 1	.	.	.	6.7400	.	.	.	.	.	.	.	.	.	.	.	.	.	
AE SL 3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Ca: 11.1100
BCR 280R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

continued analysis listed in mg/kg except % which is mass %

Number	Ag	Al%	As	Au	B	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga
JLk-1	.	.	26.8	.	.	574	.	.	.	.	87.9	18.0	69.0	10.9	62.9	6.57	3.59	1.27	589	.
NCS DC73372	0.075	.	8.4	.	52	520	2.1	0.27	.	(0.10)	74	14	75	8.1	26	4.7	2.8	1.27	500	16.3
CAN LKSD-2	0.8	.	11	0.003	65	780	2.5	.	18	.	108	17	57	3.0	37	7.3	.	1.9	590	.
CAN LKSD-3	2.7	.	27	0.003	25	680	1.9	.	16	.	90	30	87	2.3	35	4.9	.	1.5	490	.
CAN LKSD-1	0.6	.	40	0.005	49	430	1.1	.	11	.	27	11	31	1.5	44	3.4	.	0.9	300	.
CAN LKSD-4	<0.5	.	16	0.002	22	330	1.0	.	49	.	48	11	33	1.7	31	3.7	.	1.1	260	.
AE SL 1	.	.	27.6	.	.	639	.	.	.	0.26	117	19.8	104	7	30	7.5	.	1.6	.	23.7
AE SL 3	.	2.4500	3.2	.	.	.	.	.	5.6	.	45.5	.	.	1.38	.	2.22	.	0.66	.	.
BCR 280R	33.4	.	.	.	.	.	.	.	.	0.85	.	16.8	126	.	53	1.46	69	224	.	.

Number	Gd	Ge	Hf	Hg	Ho	K%	La	Li	Lu	Mg%	Mn	Mo	Na	Nb	Nd	Ni	P	Pb	Pr	Rb
JLk-1	6.02	.	3.78	.	1.06	.	40.6	.	0.571	.	.	.	.	15.8	35.7	35.0	.	43.7	8.53	147
NCS DC73372	5.4	1.3	6.6	0.0030	1.03	.	38	39	0.41	.	520	0.45	.	14.4	32	33	490	25	8.5	102
CAN LKSD-2	.	.	7.0	.	.	.	68	20	0.6	.	202	<5	.	8	58	26	.	44	.	85
CAN LKSD-3	.	.	4.8	.	.	.	52	25	0.4	.	1440	<5	.	8	44	47	.	29	.	78
CAN LKSD-1	.	.	3.6	.	.	.	16	7	0.4	.	700	10	.	7	16	16	.	82	.	24
CAN LKSD-4	.	.	2.8	.	.	.	26	12	0.5	.	500	<5	.	9	25	31	.	91	.	28
AE SL 1	.	.	4.2	0.13	.	1.4500	52.6	.	0.54	.	3460	.	1700	.	.	44.9	.	37.7	.	113
AE SL 3	.	.	9.1	.	.	0.8740	22.5	.	0.3	2.7000	.	.	6690	.	21.5	.	.	.	.	38.8
BCR 280R	.	.	.	1.46	.	.	.	.	.	.	.	.	.	.	.	69	.	.	.	.

Number	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
JLk-1	.	15.9	.	7.87	.	67.5	1.57	1.23	19.5	.	1.17	.	3.83	117	.	40.0	3.99	152	137
NCS DC73372	0.9	12	0.14	6.2	3.4	165	1.1	0.86	12.8	0.424%	.	0.42	2.1	90	2.0	25	2.6	61	234
CAN LKSD-2	1.1	13	.	11	5	220	0.8	1.4	13.4	3460	.	.	7.6	77	<4	44	4.0	209	254
CAN LKSD-3	1.3	13	.	8	3	240	0.7	1.0	1.4	3330	.	.	4.6	82	<4	30	2.7	152	178
CAN LKSD-1	1.2	9	.	4	16	250	0.3	0.6	2.2	3010	.	.	9.7	50	<4	19	2.0	331	134
CAN LKSD-4	1.7	7	.	5	5	110	0.4	1.2	5.1	2270	.	.	31.0	49	<4	23	2.0	194	105
AE SL 1	1.31	17.3	2.85	9.25	.	80	1.58	1.4	14	5170	.	.	4.02	170	.	.	3.42	223	.
AE SL 3	0.56	3.91	.	3.83	.	0.47	0.7	0.49	7	2610	.	.	2.3	.	.	.	1.89	.	.
BCR 280R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	224	.

CRM ESTUARY AND MARINE SEDIMENT

analysis listed in mg/kg except % which is mass % CH_3Hg = Methyl Mercury

Number	Hg	CH_3Hg	Ag	Al%	As	Ba	Be	Br	Ca%	Cd	Ce	Co	Cr	Cs	Cu	Eu	Fe%	Ga	Hf
ERM-CC580	132 tot	0.075	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NMIJ 7302a	0.52	.	0.49	.	22.1	.	.	.	.	1.32	.	12.4	145	.	57.8	.	.	.	.
AE 433	0.168	0.17	0.133	7.82	18.9	268	.	67	.	0.153	64.5	12.9	136	6.40	30.8	1.18	4.08	.	3.66
BCR 277R	0.128	.	.	.	18.3	.	.	.	.	0.61	.	22.5	188	.	63	.	.	.	.
NMIJ 7303a	0.067	.	0.098	.	8.6	.	.	.	.	0.342	.	11.1	39.1	.	23.1	.	.	.	.
SRM 1646a	(0.04)	.	(<0.3)	2.297	6.23	(210)	(<1)	.	0.519	0.148	(34)	(5)	40.9	.	10.01	.	2.008	(5)	.

Number	K%	La	Li	Lu	Mg%	Mn	Mo	Na%	Nd	Ni	P%	Pb	Rb	Ru	S%	Sb	Sc	Se
ERM-CC580	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NMIJ 7302a	.	.	.	.	.	.	1.98	.	.	25.8	.	82.7	.	.	.	1.22	.	0.61
AE 433	1.66	33.7	67.0	0.361	1.15	316	.	1.35	29.2	39.4	.	26.0	.	99.9	.	1.96	14.6	0.78
BCR 277R	.	.	.	.	.	.	.	.	.	130	.	.	.	.	.	.	.	.
NMIJ 7303a	.	.	.	.	.	.	0.96	.	.	21.8	.	31.3	.	.	.	0.69	.	0.24
SRM 1646a	0.864	(17)	(18)	.	0.388	2345	.	0.741	(15)	22.5	0.027	11.7	(38)	.	0.352	(0.3)	(5)	0.193

Number	Si%	Sm	Sn	Sr	Ta	Tb	Th	Ti%	Tl	U	V	Yb	Zn	Zr	Units
ERM-CC580	.	.	.	.	.	.	.	.	.	.	.	.	.	.	40 g
NMIJ 7302a	.	.	18.5	.	.	.	.	.	.	.	.	.	401	.	60 g
AE 433	.	5.61	2.32	302	1.03	0.696	9.78	.	.	2.45	160	2.24	101	148	10 g
BCR 277R	.	.	.	.	.	.	.	.	.	.	.	.	178	.	40 g
NMIJ 7303a	.	.	4.21	.	.	.	.	.	.	.	.	.	107	.	60 g
SRM 1646a	40.0	.	(1)	(68)	.	.	(5.8)	0.456	(<0.5)	(2)	44.84	.	48.9	.	70 g

CRM MARINE SEDIMENT

analysis listed in mass % T = Total

Number	Al_2O_3	C(org)	T.C	CO_2	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI
NCS DC75306	17.42	1.18	.	0.96	1.47	.	.	6.77	.	3.53	3.08	0.062	2.93	0.121	.	54	0.775	.
JMs-1	15.82	.	1.69	.	2.13	2.12	4.54	6.90	6.79	2.24	2.87	0.102	4.07	0.18	1.32T	53.74	0.70	15.44
JMs-2	14.18	.	0.39	.	4.68	<0.04	10.96	10.96	7.13	2.70	3.24	2.26	5.79	1.26	0.29T	41.78	1.40	19.15
GBW 07313	13.75	(0.25)	.	(0.38)	1.71	(0.29)	6.58	.	5.39	2.95	3.38	0.43	4.81	0.45	0.31	53.88	0.67	(9.93)
GBW 07315	11.41	(0.3)	.	3.6	5.74	(0.30)	5.93	.	(5.8)	2.32	3.02	0.59	4.43	0.48	.	51.1	0.61	(13.0)
NCS DC75307	11.02	(0.85)	.	14.6	18.25	.	.	4.05	.	2.12	2.03	0.0619	2.47	0.12	(0.11)	37.59	0.52	.
GBW 07316	7.7	(0.26)	.	17.3	22.6	(0.23)	3.81	.	(4.0)	1.61	2.04	0.40	3.76	0.33	.	31.6	0.39	(25.8)

	Al			Ca			Fe		K	Mg	Mn	Na	P			Ti	
NRC MESS-3	8.59	.	(2)	.	1.47	.	.	4.34	.	(2.6)	(1.6)	0.0324	(1.6)	(0.12)	(0.19)	(27)	0.44	.
SRM 2702	8.41	(3.27)	(3.36)	.	0.343	.	.	7.91	.	2.054	0.990	0.1757	0.681	0.1552	(1.5T)	.	0.884	.
NRC PACS-2 +	6.62	.	(3.3)	.	1.96	.	.	4.09	.	1.24	1.47	0.0440	3.45	0.096	1.29	(28)	0.443	.
NRC HISS-1	0.73	.	.	.	1.14	.	.	0.246	.	0.332	0.075	0.00661	0.373	.	.	(44)	0.076	.
BCR 320R	.	.	.	.	.	.	.	2.5700	.	.	.	0.0910	.	.	.	.	.	.

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba%	Be	Bi	Br	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu	F%
NCS DC75306	.	7.6	.	0.0477	.	(0.45)	.	0.28	77.4	.	18.9	107	(13.8)	29.1	4.59	2.57	1.26	.
JMs-1	.	18	81	0.0307	1.3	.	.	.	.	2.69	18.1	133	5.9	88	.	.	.	.
JMs-2	.	35	106	0.1856	1.8	.	.	.	.	4.05	226	78	3.0	447	.	.	.	.
GBW 07313	.	5.8	125	0.44	.	.	.	.	92	4.07	76.7	58.4	9.4	424	19.9	11.0	5.3	(0.13)
GBW 07315	.	7.1	125	0.31	1.9	0.9	145	(0.25)	82	3.9	81	59	6.8	357	17	9.8	4.5	0.11
NCS DC75307	.	2.37	.	0.0458	1.96	0.29	(98.2)	0.25	54.5	.	11.2	60	8.6	20.7	3.37	2.01	0.93	0.071
GBW 07316	.	4.6	84	0.25	1.5	0.57	125	(0.3)	55	3.5	53	38	4.5	231	11	6.3	3.0	0.08
NRC MESS-3	0.18	21.2	.	.	2.30	.	.	0.24	.	.	14.4	105	.	33.9	.	.	.	.
SRM 2702	0.622	45.3	.	0.03974	(3.0)	.	.	0.817	123.4	.	27.76	352	(7.1)	117.7	.	.	.	.
NRC PACS-2 +	1.22	26.2	.	.	1.0	.	.	2.11	.	(3)	11.5	90.7	.	310	.	.	.	.
NRC HISS-1	0.016	0.801	.	.	0.129	.	.	0.024	.	(0.35)	(0.65)	30.0	.	2.29	.	.	.	.
BCR 320R	.	21.7	.	.	.	.	.	2.64	.	.	9.7	59	.	46.3	.	.	.	.

Number	Ga	Gd	Hf	Hg	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
NCS DC75306	.	5.44	(5.2)	0.022	0.96	.	40.8	(88.5)	0.37	.	17.1	33.1	46.1	29	8.32	164	(1.06)	16.1
JMs-1	.	.	.	.	.	0.101	.	62	.	.	.	.	53	49	.	88	1.4	.
JMs-2	.	.	.	.	.	0.178	.	43	.	.	.	.	311	88	.	65	4.5	.
GBW 07313	23.7	22.0	.	.	4.3	.	67.8	60.0	1.46	7.2	(15.1)	91.8	150	29.3	20.1	97.3	1.85	25.6
GBW 07315	18	18	3.6	0.95	3.6	.	62	51	1.3	14	11	75	167	37	17	73	2.0	23
NCS DC75307	14.5	4.01	(2.88)	0.032	0.73	.	27.7	58.1	0.31	0.37	12.7	23.2	39.2	16.8	6.69	96.1	0.5	(10.1)
GBW 07316	12	12	2.3	0.13	2.4	.	44	35	0.89	5.7	6.9	51	108	22	12	50	1.3	15
NRC MESS-3	.	.	.	0.091	.	.	.	73.6	.	2.78	.	.	46.9	21.1	.	.	1.02	.
SRM 2702	24.3	.	(12.6)	0.4474	.	.	73.5	(78.2)	.	10.8	(63)	(56)	75.4	132.8	.	127.7	5.60	25.9
NRC PACS-2 +	.	.	.	3.04	.	.	.	32.2	.	5.43	.	.	39.5	183	.	.	11.3	.
NRC HISS-1	.	.	.	(0.01)	.	.	.	2.83	.	(0.13)	.	.	2.16	3.13	.	.	(0.13)	.
BCR 320R	.	.	.	0.85	.	.	.	.	.	.	.	.	27.1	85	.	.	.	5.2

\+ NRC PACS-2 also lists butylins as Sn. In ppm: Tributylin: 0.890, Dibutylin: 1.047, Monobutylin: (0.6)

Number	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units	Other
NCS DC75306	0.51	6.28	.	130	(1.22)	0.76	.	14.2	.	0.38	4.5	(131)	(1.93)	24.9	2.46	114	144	70 g	
JMs-1	.	.	.	154	.	.	0.132	.	.	.	.	127	.	24.3	.	264	132	100 g	
JMs-2	.	.	.	454	.	.	1.38	.	.	.	.	183	.	254	.	166	220	100 g	
GBW 07313	.	21.5	.	267	.	3.4	.	13.9	.	1.54	1.98	112	5.5	104	9.8	160	177	25 g	NaCl: (8.73)
GBW 07315	.	18	.	298	(0.6)	3.1	.	11	.	1.4	1.9	101	5.3	98	8.9	137	140	50 g	SO_3: (0.63)
NCS DC75307	1.14	4.34	.	577	(0.90)	0.58	.	11.4	(0.51)	0.3	2.8	80.8	(1.41)	21.7	1.97	90.4	104	70 g	
GBW 07316	.	12	.	667	(0.41)	2.0	.	7.0	.	0.96	1.1	69	4.1	69	5.8	142	94	50 g	SO_3: (0.51)
NRC MESS-3	0.72	.	2.50	129	.	.	.	0.90	.	.	(4)	243	.	.	.	159	.	50 g	
SRM 2702	.	(10.8)	31.6	119.7	.	.	.	20.51	0.827%	.	(10.4)	357.6	(6.2)	.	.	485.3	.	50 g	
NRC PACS-2 +	0.92	.	19.8	276	.	.	.	(0.6)	.	.	(3)	133	.	.	.	364	.	65 g	
NRC HISS-1	0.050	.	(0.11)	96.9	.	.	.	(0.06)	.	.	(0.26)	6.80	.	.	.	4.94	.	100 g	
BCR 320R	.	.	.	.	.	.	.	5.3	0.65	.	1.56	46.5	.	.	.	319	.	40 g	

CRM RIVER SEDIMENT

analysis listed in mg/kg except % which is mass % 50 g units

Number	Ag	Al%	As	Au	Ba	Be	Br	C%	Ca%	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Eu	Hf	Hg	Fe
SRM 1944	6.4	5.33	18.9	(0.1)	.	1.6	86	.	1.0	8.8	(65)	1.4	14	266	3	380	(1.3)	.	3.4	3.53%
SRM 8704	.	6.10	(17)	.	413	.	.	3.351	2.641	2.94	66.5	.	13.57	121.9	5.83	.	1.31	8.4	.	3.97%

continued

Number	K%	Mg%	Mn	Na%	Ni	Pb	Rb	Sb	Sc	Se	Si%	Sn	Th	Ti%	Tl	U	V	Zn
SRM 1944	1.6	(1.0)	505	1.9	76.1	330	75	(5)	10.2	1.4	31	42	(13)	0.4300	0.59	(3.1)	100	656
SRM 8704	2.001	1.200	544	0.553	12.9	150	.	3.07	11.26	.	.	.	9.07	0.457	.	3.09	94.6	408

CRM STREAM SEDIMENT

analysis listed in mass % BCR: 40 g units JSd: 20 g units all others: 70 g units

Number	SiO_2	Al_2O_3	Org.C	CO_2	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
NCS DC73308	88.89	2.84	0.40	0.42	0.70	(0.26)	3.86	.	(2.1)	.	0.125	0.12	.	0.039	.	.	2.88
NCS DC73373	80.6	9.7	.	(0.08)	0.34	(0.2)	1.46	.	(0.9)	.	3.9	0.24	.	2.35	.	.	1.07
GBW 07312	77.29	9.30	(0.40)	(0.18)	1.16	1.19	4.88	.	2.15	.	2.91	0.47	.	0.44	.	.	(2.62)
GBW 07311	76.25	10.37	(0.24)	(0.09)	0.47	(0.35)	4.39	.	2.67	.	3.28	0.62	.	0.46	.	.	(3.02)
JSd-3	76.00	9.908	.	.	0.560	1.161	3.057	4.368	2.838	0.964	1.971	1.17	0.149	0.411	0.0817	0.403	.
JSd-1	66.55	14.65	.	(0.0867)	3.034	1.363	3.526	5.059	(2.301)	0.836	2.183	1.813	0.0924	2.727	0.122	0.643	.
GBW 07309	64.89	10.58	0.46	4.20	5.35	1.53	4.86	.	2.93	.	1.99	2.39	.	1.44	.	.	7.21
GBW 07306	61.24	14.16	(0.36)	2.03	3.87	1.58	5.88	.	3.49	.	2.43	3.00	.	2.30	.	.	.
JSd-2	60.78	12.31	.	(0.501)	3.658	5.955	4.552	11.65	2.554	0.451	1.145	2.731	0.120	2.438	0.105	0.614	.
NCS DC73371	59.2	15.4	.	(0.07)	4.0	(2.4)	6.50	.	(2.7)	.	2.8	3.30	.	3.4	.	.	3.8
NCS DC73374	57.3	13.4	.	(0.26)	3.5	(2.4)	9.5	.	(4.4)	.	2.3	3.4	.	2.0	.	.	5.64
BCR 667	estuary sediment	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

continued analysis listed in mg/kg except * which is ng/g and % which is mass %

Number	Ag	As	Au*	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga
NCS DC73308	0.27	25	.	26	42	0.9	0.38	(2.4)	1.12	38	(50)	15.3	136	2.3	22.6	2.2	1.3	0.47	149	6.4
NCS DC73373	0.026	2.0	.	5.3	690	0.96	0.057	.	(0.04)	42	(33)	3.6	(12)	1.0	11	1.56	0.98	0.38	(130)	11.2
GBW 07312	1.15	115	(5.6)	24	206	8.2	10.9	(1.7)	4.0	61	(163)	8.8	35	7.9	1230	4.8	3.1	0.61	1250	14.1
GBW 07311	3.2	188	(3.6)	68	260	26	50	(2.3)	2.3	58	290	8.5	40	17.4	79	7.2	4.6	0.60	1650	18.5
JSd-3	(3.38)	252	(5.66)	.	462	.	.	.	.	42.0	.	12.7	35.3	30.6	426	2.22	1.07	0.686	3200	.
JSd-1	(0.036)	2.42	(0.64)	.	520	1.40	.	.	.	34.4	.	11.2	21.5	1.89	22.0	2.23	0.906	0.925	306	.
GBW 07309	0.089	8.4	(1.3)	54	430	1.8	0.42	(1.5)	0.26	78	(50)	14.4	85	5.1	32	5.1	2.8	1.33	494	14.0
GBW 07306	0.36	13.6	.	50	330	1.7	5.0	.	0.43	68	.	24.4	190	9.1	383	3.8	2.2	1.50	690	16.7
JSd-2	(1.04)	38.6	(54.6)	.	1199	.	.	.	.	23.4	.	48.4	108	1.07	1117	2.86	1.48	0.81	259	.
NCS DC73371	0.03	2.7	.	(9.7)	920	2.9	0.49	.	0.11	81	(84)	20	126	5.5	29	4.3	2.3	1.7	860	23.6
NCS DC73374	0.13	18	.	27	760	5.7	3.0	.	(0.20)	109	(50)	28	243	4.3	66	7.0	4.0	2.5	580	25
BCR 667	.	.	.	.	.	.	.	(99.7)	(0.67)	56.7	.	(23.0)	(178)	(7.8)	(60)	4.01	2.35	1.00	Fe:	
(4.48)																				

continued

Number	Gd	Ge	Hf	Hg*	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	S
NCS DC73308	2.2	0.40	1.8	230	0.45	1.6	0.067	13.0	13.0	0.19	1010	1.2	6.8	11.8	30	271	27	3.2	9.2	90
NCS DC73373	1.8	1.2	4.5	11	0.33	.	(0.05)	24	7.3	0.16	218	0.5	8.9	14.7	(3)	167	13	4.3	70	(50)
GBW 07312	4.4	1.87	8.3	56	0.04	1.8	0.96	32.7	39.0	0.58	1400	8.4	15.4	26	12.8	235	285	6.9	270	940
GBW 07311	5.9	1.81	5.4	72	1.4	2.0	1.9	30	71	0.78	2490	5.9	25	27	14.3	255	636	7.4	408	170
JSd-3	.	.	3.21	(254)	.	.	.	19.8	151	0.196	.	.	7.80	15.7	19.6	.	82.1	3.09	285	(399)
JSd-1	2.71	.	3.55	(15.5)	.	.	.	18.1	22.8	0.186	.	.	11.1	17.6	7.04	.	12.9	4.05	67.4	(68)
GBW 07309	5.5	1.3	9.7	83	0.96	(0.61)	0.056	40	30	0.4	620	0.64	18	34	32	670	23	9.2	80	150
GBW 07306	5.5	1.3	4.9	45	0.76	.	0.14	39	40	0.34	970	7.7	12	33	78	1020	27	8.4	107	784
JSd-2	.	.	2.70	(106)	.	.	.	11.3	(19.2)	0.252	.	11.5	4.56	13.2	92.8	.	146	2.40	26.9	
1.31%																				
NCS DC73371	5.6	1.6	9.1	31	0.79	.	.	41	32	0.38	910	1.05	31	36	56	1520	31	9.3	126	(150)
NCS DC73374	7.6	1.6	13.6	34	1.43	.	(0.18)	54	24	0.58	1230	2.7	72	45	87	1000	66	11.8	87	(110)
BCR 667	4.41	.	.	.	0.80	.	.	27.8	.	0.325	(920)	.	.	25.0	(128)	.	(31.9)	6.1	.	.

continued

Number	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NCS DC73308	6.3	4.1	0.28	2.4	1.4	25	(0.5)	0.42	0.08	5.0	0.1270	0.21	0.20	2.1	107	1.6	14	1.2	46	70
NCS DC73373	0.17	2.4	0.039	2.3	(1.0)	86	(0.5)	0.28	.	5.4	0.137	(0.3)	0.13	0.7	20	0.52	8.3	0.99	16	188
GBW 07312	24	5.1	0.25	5.0	54	24	3.2	0.82	0.29	21.4	0.1510	1.76	0.53	7.8	47	37	29	3.7	498	234
GBW 07311	14.9	7.4	0.20	6.2	370	29	5.7	1.13	(0.36)	23.3	0.2100	2.9	0.74	9.1	47	126	4.3	5.1	373	153
JSd-3	.	10.5	.	3.26	.	58.7	0.687	0.368	.	7.79	.	.	.	1.66	70.4	.	14.9	1.40	136	124
JSd-1	.	10.9	.	3.48	.	340	0.893	0.431	.	4.44	.	.	.	1.00	76.0	.	14.8	1.18	96.5	132
GBW 07309	0.81	11.1	0.16	6.3	2.6	166	1.3	0.87	(0.04)	12.4	0.5500	0.49	0.44	2.6	97	1.8	27	2.8	78	370
GBW 07306	1.25	17	0.30	5.6	2.8	266	0.75	0.69	0.13	9.0	0.464	1.08	0.35	2.4	142	25	20	2.1	144	170
JSd-2	.	17.5	.	2.68	.	202	.	0.440	.	2.33	.	.	.	1.10	125	.	17.4	1.67	2056	111
NCS DC73371	0.30	14	0.11	6.7	(3.4)	480	3.0	0.81	.	27	0.537	(0.7)	0.34	4.6	115	1.0	22	2.3	90	320
NCS DC73374	2.7	18	(0.12)	8.5	(9)	216	5.0	1.23	.	12.4	1.44	(0.4)	0.60	3.0	190	5.7	34	3.8	165	520
BCR 667	(0.96)	13.7	(1.59)	4.66	.	.	(0.876)	0.682	.	10.0	.	.	0.326	2.26		.	.	2.20	(175)	.

CRM STREAM SEDIMENT

analysis listed in mass % 100 g units

Number	Al_2O_3	C	CaO	Fe	FeO	Fe_2O_3	H_20-	K_2O	MgO	MnO	Na_2O	P_2O_5	Pb	S	SiO_2	TiO_2	Zn	LOI
CAN STSD-4	12.1	4.1	4.0	4.1	.	5.7	1.73	1.6	2.1	0.2	2.7	0.2	.	0.09	58.9	0.8	0.0107	10.2
SARM 51	11.87	.	0.86	.	(3.0)	18.36	.	0.33	0.92	0.21	0.07	0.21	0.52	(0.24)	33.81	0.82	0.22	.
CAN STSD-3	10.9	8.4	3.3	4.4	.	6.2	3.47	1.8	2.2	0.3	1.5	0.4	.	0.14	48.6	0.7	0.0204	21.6
CAN STSD-1	9.0	12.3	3.6	4.7	.	6.5	4.46	1.2	2.2	0.5	1.8	0.4	.	0.18	42.5	0.8	0.0178	29.7
SARM 46	6.71	.	1.32	.	(18.0)	28.16	.	0.35	3.16	1.14	0.28	0.11	.	(0.17)	35.90	0.60	0.59	.

continued analysis listed in mg/kg

Number	Ag	As	Au	B	Ba	Be	Br	Ce	Co	Cr	Cs	Cu	Dy	Eu	F	Ga	Hf	La	Li	Lu	Mn
CAN STSD-4	<0.5	15	0.004	15	2000	1.7	13	44	13	93	1.9	65	3.8	1.2	380	.	5.5	24	14	0.5	1520
SARM 51	.	.	.	.	(335)	.	.	(120)	60	509	.	268	.	.	.	(20)	.	.	.	.	.
CAN STSD-3	<0.5	28	0.007	82	1490	2.6	24	63	16	80	5.2	39	5.4	1.3	850	.	5.1	39	23	0.8	2730
CAN STSD-1	<0.5	23	0.008	89	630	1.6	40	51	17	67	1.8	36	5.6	1.6	950	.	6.1	30	11	0.8	3950
SARM 46	.	.	.	.	(180)	.	.	(110)	56	559	.	566	.	.	.	.	.	.	.	.	.

Number	Mo	Nb	Nd	Ni	Pb	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	U	V	W	Y	Yb	Zr
CAN STSD-4	<5	9	31	30	16	39	7.3	14	5	2	350	0.6	0.8	4.3	4530	3.0	106	<4	24	2.6	190
SARM 51	.	(9)	.	178	.	37	.	.	.	.	44	.	.	(10)	.	.	181	.	21	.	121
CAN STSD-3	6	12	23	30	40	68	4.0	13	7	4	230	0.9	1.1	8.5	4400	10.5	134	<4	36	3.4	196
CAN STSD-1	<5	5	28	24	35	30	3.3	14	6	4	170	0.4	1.2	3.7	4600	8.0	98	<4	42	4.0	218
SARM 46	(10)	.	.	(125)	(1.3)	(20)	.	.	.	.	25	.	.	.	.	.	225	.	(20)	.	101

RM STREAM SEDIMENT

typical analysis listed in mass % except * which is mg/kg 50 g units

Number	pH	CN *	Al	Ca	Fe	Hg *	K	Mg	Mn	Na	Si	Zn
RT 016	7.85	.	0.8920	2.2600	1.6800	0.158	0.1960	1.3200	0.0180	0.0292	(0.0347)	0.00697
RT 015	7.53	6.04	0.9200	2.3500	1.7100	0.100	0.2070	1.3600	0.0183	0.0401	(0.0491)	0.00699
RT 008	5.19	.	2.3900	0.2940	3.3000	0.720	0.3950	0.6740	0.0261	0.8700	(0.0471)	0.0134

continued analysis listed in mg/kg

Number	Ag	B	Ba	Be	Cd	Co	Cr	Cu	Mo	Ni	Pb	Sb	Se	Sr	Tl	V
RT 016	(0.7)	(13)	79.3	0.490	0.47	5.96	14.5	15.5	(0.97)	16.7	14.1	(<1)	(1)	(61)	(4.6)	22.5
RT 015	(<1)	(8.6)	83.0	0.470	(<5)	6.04	14.3	16.1	(1.16)	17.5	15.0	(<3)	(0.8)	(62)	(<5)	22.1
RT 008	(0.89)	(26.5)	53.6	1.07	(0.82)	11.2	48.1	36.4	(1.84)	26.0	95.3	(2.55)	(0.69)	(41.5)	(0.28)	44.4

CRM SEDIMENT

analysis listed in mass % 100 g units

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
VS 3486-86	70.54	11.29	0.52	.	(3.5)	5.24	2.21	0.48	0.11	1.67	0.28	0.62	.
VS 3484-86	51.95	16.76	1.13	(2.2)	(3.5)	6.33	2.51	1.53	0.071	1.37	0.18	0.85	(17.17)
VS 3483-86	45.59	11.60	7.05	(1.3)	(2.8)	4.62	2.96	5.82	0.073	0.87	0.15	0.63	(20.33)
VS 3485-86	25.07	5.03	17.76	(0.24)	(0.2)	10.59	1.13	11.70	0.50	0.61	1.82	0.27	(25.14)

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As%	Au	B%	Ba%	Be	Cd	Co	Cr	Cu%	Ga	La%	Li%
VS 3486-86	.	.	.	0.016	0.039	3.6	9	9	76	0.025	16	0.0032	0.015
VS 3484-86	(0.7)	(0.004)	(0.025)	(0.008)	0.058	2.3	(1.9)	18	120	0.0052	17	0.0034	0.0012
VS 3483-86	(0.5)	(0.004)	(0.04)	(0.009)	0.047	2.0	(2)	14	66	0.0048	12	0.00322	0.010
VS 3485-86	2.6	(0.009)	1.3	(0.0014)	0.035	2.5	(3.5)	11	28	0.026	9	0.026	0.0020

Number	Mo	Nb	Ni	Pb%	Rb%	S%	Sb%	Sc	Sn%	Sr%	V%	Y%	Yb	Zn%	Zr%
VS 3486-86	.	17	25	0.011	0.019	0.43	0.017	8	0.04	0.020	0.006	0.0016	2.24	0.039	0.021
VS 3484-86	(3)	60	58	0.0016	0.010	0.05	.	15	0.00044	0.020	0.014	0.0030	3.2	0.009	(0.018)
VS 3483-86	(3)	12	33	0.0016	0.009	0.05	.	9	0.00037	0.030	0.009	0.0023	2.5	0.005	0.014
VS 3485-86	29	(7)	19	(0.020)	0.004	0.05	.	9	0.0004	0.018	0.007	0.004	3.3	0.014	0.007

CRM SERPENTINITE

analysis listed in mass % T = total GUW: 50 g units all others: 100 g units

Number	Al_2O_3	CO_2	CaO	Cr_2O_3	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	Ni	P_2O_5	SiO_2	TiO_2	LOI
SARM 47	1.09	.	(0.1)	0.29	(0.4)	4.14	.	(0.02)	42.09	0.06	(0.05)	0.2221	(0.02)	36.30	(0.01)	.
GUW SW	0.66	0.28	0.18	.	2.00	7.40	13.6	(0.0014)	38.5	0.084	0.013	0.22	(0.0017)	39.04	0.016	.
USZ 24-99	(0.475)	(0.84)	(0.681)	.	(0.27)	8.00T	0.58 (-)	(0.018)	38.22	0.082	(0.038)	0.2300	(0.023)	38.54	(0.022)	13.33

continued analysis listed in mg/kg except % which is mass %

Number	As	B	Ba	Ce	Co	Cr%	Cs	Cu	F	Ga	Li_2O	Nd	Pb	Rb	S	Sc	Sn	Sr	U	V	W	Y	Zn
SARM 47	.	.	(75)	(20)	79	.	.	(5)	.	(5)	.	.	(60)	.	.	.	.	(3)	.	(16)	.	(5)	45
GUW SW	(5)	37	19	.	102	0.24	(5)	7	66	(4)	(3)	(4)	(6)	(5)	(3)	(5)	(5)	.	(5)	20	(5)	.	58
USZ 24-99	.	.	.	.	106	0.2780	.	.	.	.	.	.	.	.	.	.	.	7.3	0.80	33.4	.	.	39

CRM SHALE

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	Fe_2O_3T	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	ZrO_2+HfO_2	LOI	Units
GBW 03104	69.63	14.82	0.13	0.22	(0.40)	5.67	.	(3.71)	3.76	0.67	0.024	0.20	0.043	0.028	0.68	.	4.17	60 g
US SCO-1	62.8	13.7	.	2.62	0.90	4.19	5.13	.	2.77	2.72	.	0.90	0.21	.	0.63	.	.	30 g
GUW TS	62.8	15.96	(0.03)	0.12	0.70	7.40	.	4.01	4.86	1.77	0.037	0.078	0.28	.	0.69	.	.	50 g
UL AWI 1	60.46	16.44	.	0.69	(5.52)	7.21	.	.	3.06	(2.09)	0.14	0.74	(0.15)	.	0.92	.	7.75	20 g
GBW 07107	59.23	18.82	(0.10)	0.60	1.39	.	7.60	+5.6	4.16	2.01	.	0.35	.	.	.	.	(5.95)	70 g
SARM 41	56.67	13.50	.	1.50	(0.3)	4.23	.	.	1.39	8.10	0.06	0.93	0.05	.	0.55	.	.	100 g
US SGR-1b	28.24	6.52	.	8.38	(1.41)	(1.46)	3.03	.	1.66	4.44	.	2.99	0.328	.	0.253	.	.	30 g
JCRM R651	21.74	71.7	.	0.19	.	1.48	.	.	0.65	0.10	.	0.03	0.19	.	3.15	0.18	0.58	100 g

continued analysis listed in mg/kg except % which is mass % and * which is ng/g N = Inorganic

Number	Ag	As	Au*	B	Ba%	Be	Bi	C Org%	T.C%	Cd	Ce	Cl%	Co	Cr	Cs	Cu
GBW 03104	.	.	.	.	.	.	.	.	.	.	.	0.014	.	.	.	.
US SCO-1	.	12	.	72	0.0570	1.8	(0.37)	.	.	.	62	(0.0051)	11	68	7.8	29
GUW TS	(0.8)	27.5	.	74	(0.18)	4	.	1.42	.	.	(168)	.	41	280	13	460
UL AWI 1	.	(15)	.	.	0.0378	(2.7)	.	.	.	.	80	.	20	119	(7)	34
GBW 07107	0.047	1.4	(1.0)	154	0.0450	3.0	0.23	(0.16)	(0.19)	0.033	109	0.0041	21	99	14	42
SARM 41	.	.	.	.	0.820	.	.	.	.	.	(60)	.	(15)	123	.	53
US SGR-1b	.	67	.	54	0.0290	.	.	(3.2N)	(32)	(0.9)	36	(0.0032)	12	30	5.2	66
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Dy	Er	Eu	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo
GBW 03104	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US SCO-1	.	.	.	770	(15)	.	.	.	.	.	.	.	30	45	.	410	1.4
GUW TS	.	.	(3.2)	1150	21	.	.	(7)	.	.	.	.	(80)	40	(3.6)	.	130
UL AWI 1	5.1	2.9	1.47	.	22	6	.	6.3	.	1.1	.	.	38	.	0.45	.	.
GBW 07107	5.1	2.7	1.7	1290	26	6.7	3.1	2.9	0.010	0.98	0.24	0.082	62	44	0.41	173	0.35
SARM 41	.	.	.	.	(20)	.	.	.	.	.	.	.	.	.	.	.	(5)
US SGR-1b	(1.9)	1.1	0.56	1960	(12)	(2)	.	1.4	(0.3)	(0.4)	.	.	20	147	.	267	35
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	N	Nb	Nd	Ni	P	Pb	Pr	Rb	S%	Sb	Sc	Se	Sm	Sn	Sr
GBW 03104	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US SCO-1	.	(11)	26	27	.	31	(6.6)	110	0.630 T	2.5	11	.	.	(3.7)	170
GUW TS	.	(13)	(108)	170	.	33	.	230	0.022	(8.2)	22	.	(22.9)	(4.1)	88
UL AWI 1	.	17	37	61	.	(24)	9.3	130	.	.	16	.	7	.	108
GBW 07107	540	14.3	48	37	690	8.7	13.6	205	(0.0066)	0.18	18.5	0.075	8.4	2.0	90
SARM 41	.	(8)	.	122	.	(30)	.	59	(0.15)	.	.	.	.	.	54
US SGR-1b	.	(5.2)	16	(29)	.	38	.	.	1.53 T	3.4	4.6	(3.5)	2.7	(1.9)	420
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
GBW 03104	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US SCO-1	.	.	.	9.7	.	.	.	.	130	(1.4)	26	.	100	160
GUW TS	(0.97)	(2.4)	.	(9.1)	.	.	.	(22)	960	.	150	(15)	63	290
UL AWI 1	1.2	0.94	.	12	.	.	0.42	3	134	.	29	3	99	223
GBW 07107	0.9	1.02	(0.023)	12.8	3950	0.71	0.43	1.5	87	0.79	26	2.6	55	96
SARM 41	.	.	.	(12)	.	.	.	.	139	.	17	.	76	146
US SGR-1b	.	.	.	4.8	.	.	(0.18)	5.4	130	2.6	(13)	(0.94)	74	(53)
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM SOIL

analysis listed in mass % — 70 g units — listed in mg/kg

Number	Al_2O_3	C(org)	CO_2	CaO	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	N	Na_2O	SiO_2	Te	Ti	Ag	As	B
NCS ZC73007	17.85	0.97	(0.1)	0.40	(0.8)	5.44	(5.8)	2.50	0.84	0.102	0.33	63.8	.	0.578	0.14	18	63
NCS ZC73006	15.3	0.78	(0.56)	1.53	1.06	6.44	(4.7)	2.36	1.80	0.094	1.26	63.6	(0.17)	0.527	0.15	21.7	63
NCS ZC73005	14.4	0.79	(1.1)	2.45	(0.8)	5.32	(4.0)	2.46	1.90	0.081	1.59	64.5	.	0.406	0.084	6.5	46
NCS ZC73001	13.80	1.35	(0.8)	2.62	(1.1)	4.17	(3.5)	2.65	1.30	0.126	2.14	65.50	.	0.427	0.083	8.9	35
NCS ZC73003	13.27	(0.47)	3.9	5.83	1.39	4.71	(3.6)	2.62	2.43	0.055	2.00	60.0	.	0.392	0.078	12.2	55
NCS ZC73002	13.14	1.07	(0.18)	1.33	(0.9)	4.21	(3.0)	2.70	1.20	0.095	1.98	69.42	.	0.392	0.098	7.4	36
NCS ZC73004	11.8	0.62	3.34	5.0	1.25	4.11	(2.8)	2.27	2.05	0.072	1.86	64.9	.	0.382	0.067	10.6	53

continued analysis listed in mg/kg

Number	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd	Ge	Hf
NCS ZC73007	411	3.8	1.44	2.6	0.25	133	78	13.6	67	13.9	32	7.4	3.8	1.66	790	25.1	8.5	1.70	8.2
NCS ZC73006	716	2.7	1.16	2.7	0.21	93	83	17.6	87	8.9	37	6.2	3.4	1.56	652	20.5	6.8	1.63	7.6
NCS ZC73005	608	2.44	0.35	1.7	0.20	80	50	14.6	70	7.0	27.4	4.8	2.6	1.36	619	18.8	5.5	1.42	6.4
NCS ZC73001	613	2.4	0.27	5.8	0.105	70	216	11.7	58	6.5	19	4.7	2.75	1.25	452	18	5.2	1.31	9.5
NCS ZC73003	492	2.04	0.30	2.1	0.15	57	(50)	12.6	59	7.2	29	4.9	2.9	1.22	592	16.8	5.1	1.3	5.5
NCS ZC73002	634	2.25	0.28	2.8	0.125	65	98	11.6	59	6.0	21.4	4.2	2.46	1.18	425	17.2	4.7	1.3	7.7
NCS ZC73004	500	1.9	0.29	4.0	0.13	66	80	11.3	65	6.0	21.6	4.5	2.57	1.18	545	15.0	4.9	1.27	7.0

continued analysis listed in mg/kg except R.E.* which is ng/g

Number	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	R.E.*	S
NCS ZC73007	0.46	1.41	1.3	0.095	67	51	0.58	441	1.15	26	57	27.4	972	61	14.6	173	(0.15)	261
NCS ZC73006	0.094	1.23	2.3	0.145	47	44	0.54	963	0.92	18.6	41	41	560	38	10.3	116	(0.14)	176
NCS ZC73005	0.089	0.93	0.9	0.057	41	39	0.42	688	0.65	14.4	36	33	730	31	9.2	108	.	173
NCS ZC73001	0.033	0.97	3.2	0.055	35.5	30.6	0.46	681	0.52	16.5	32	26	500	22	8.5	108	(0.08)	270
NCS ZC73003	0.021	1.01	1.4	0.058	29	36	0.46	774	0.96	12	27.9	32	708	19	7.0	94	.	154
NCS ZC73002	0.060	0.89	1.6	0.047	34	30	0.41	572	0.60	13.8	30	25.4	483	24.7	7.9	110	.	217
NCS ZC73004	0.052	0.92	2.4	0.044	34	31.5	0.41	580	0.48	14	30	28.5	833	21.6	7.9	91	(0.10)	(160)

continued analysis listed in mg/kg (DA) indicates decomposition by aqua regia

Number	Sb(DA)	T.Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NCS ZC73007	1.7	(1.9)	14.0	0.51	10.4	12.4	68	2.8	1.3	28	1.12	0.57	5.9	105	5.8	38	3.8	100	275
NCS ZC73006	1.9	(1.9)	14.8	0.31	7.8	4.5	115	1.52	1.08	14.5	0.67	0.53	3.0	119	2.8	33	3.5	94	272
NCS ZC73005	0.073	(0.81)	11.7	0.16	6.4	3.1	152	1.08	0.87	12.7	0.63	0.41	2.45	86	1.5	25	2.53	96	227
NCS ZC73001	0.68	(0.94)	10.2	0.21	6.0	3.4	226	1.3	0.84	11.3	0.58	0.42	2.25	74	1.66	26.5	2.81	60	350
NCS ZC73003	1.05	(1.17)	12.6	0.16	5.6	2.8	240	0.85	0.84	10	0.51	0.44	2.4	86	1.64	26.4	2.9	78	195
NCS ZC73002	0.61	(0.82)	10.0	0.20	5.5	3.1	182	1.05	0.76	10.8	0.62	0.38	2.2	74	1.65	23.6	2.54	65	270
NCS ZC73004	0.86	(0.99)	10.5	0.16	5.6	3.3	195	1.02	0.80	11.0	0.52	0.40	2.19	74	1.6	24.5	2.6	65	257

CRM AVAILABLE NUTRIENTS IN SOIL

500 g or 1000 g units

Number	Total N $w(N)/10^{-2}$	Hydrolyzable N $w(N)/10^{-6}$	Organic Matter $w(OM)10^{-2}$	Cation Exchange Capacity cmol(+)/kg	Exchangeable Al $cmol(1/3Al^{3+})/kg$	Available B $w(B)/10^{-6}$	Echangeable Ca $cmol(1/2Ca^{2+})/kg$	Available Cu $w(Cu)/10^{-6}$	Available Fe $w(Fe)/10^{-6}$
NCS DC85103	0.094	66	1.21	(22.4)	.	0.34	.	0.82	26
NCS DC85102	0.086	69	1.43	(13.0)	.	0.60	.	1.13	38
NCS DC85105	0.078	67	1.63	11.2	0.91	0.34	4.2	(2.9)	29
NCS DC85106	0.076	90	1.48	6.0	0.72	0.28	2.6	(0.52)	78

Number	Exchangeable H $cmol(H^+)/kg$	Available K $w(K)/10^{-6}$	Exchangeable K $cmol(K^+)/kg$	Exchangeable Mg $cmol(1/2Mg^{2+})/kg$	Available Mn $w(Mn)/10^{-6}$	Available Mo $w(Mo)/10^{-6}$	Exchangeable Na cmol(Na+)/kg	Available P $w(P)/10^{-6}$	Available Si $w(Si)/10^{-6}$	Available Zn $w(Zn)/10^{-6}$	pH
NCS DC85103	.	298	.	.	(199)	0.10	.	13.8	283	0.66	(8.14)
NCS DC85102	.	267	.	.	(154)	0.10	.	18.3	310	1.2	(8.24)
NCS DC85105	0.22	156	0.40	1.21	(17)	0.20	(0.11)	14.8	432	(2.6)	(5.44)
NCS DC85106	0.18	196	0.50	0.27	(11)	0.17	(0.11)	48	392	(2.6)	(5.44)

SILLIMANITE

Number	Al_2O_3	SiO_2	CaO	Fe_2O_3	K_2O	Li_2O	MgO	MnO	Na_2O	TiO_2	L.O.I.	Units	Other
CRM													
BCS 309	61.1	34.1	0.22	1.51	0.46	(0.01)	0.17	(0.03)	0.34	1.92	.	100 g	
JCRM R304 *	55.94	35.90	0.427	0.585	0.329	.	0.451	.	0.273	1.33	4.26	100 g	ZrO_2+HfO_2: 0.105
RM													
CERAM 2CAS12	63.6	34.0	0.31	0.30	0.12	<0.01	0.06	.	0.13	1.34	0.12	25 or 100 g	
CERAM CAS15	57.42	38.56	0.22	0.65	0.57	.	0.19	.	0.28	1.61	**(5.54)	25 g	** Ignited, LAST OF STOCK

* Sold in set JCRM R041 (Mullite), R303 (Bauxite), and R304 only.

CRM SILLIMANITE SCHIST

analysis listed in mass % — 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
SARM 44	58.80	0.14	2.06	(1.0)	(0.18)	(0.1)	(0.03)	(0.05)	(0.10)	34.84	1.83

continued — analysis listed in mg/kg

Number	Ba	Ce	Co	Cr	Cu	Ga	Mo	Nb	Ni	Pb	Rb	Sr	Th	V	Y	Zn	Zr
SARM 44	(50)	(220)	(8)	384	(10)	(55)	(15)	96	(15)	(30)	13	5	50	395	84	271	406

CRM SILT

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	K_2O	FeO	Fe_2O_3	MgO	MnO	Na_2O	P_2O_5	TiO_2	L.O.I.	Units
VS 3133-85	60.85	14.40	.	2.95	3.56	.	5.45	2.54	0.087	2.33	0.18	0.62	6.39	100 g
VS 3132-85	60.54	16.46	.	0.41	2.43	.	8.76	1.60	0.13	1.61	0.19	0.98	6.78	100 g
VS 5371-90	59.60	8.96	2.70	6.40	1.39	1.2	5.05	3.16	0.37	4.52	0.12	0.59	9.6	50 g
VS 3131-85	47.0	9.48	.	7.76	2.26	.	5.92	6.06	0.30	0.53	0.13	0.50	20.10	100 g

continued — analysis listed mass %

Number	As	B	Ba	Ce	Cr	Cu	Ni	Rb	S	Sr	V	Zn	Zr
VS 3133-85	(0.043)	0.006	0.091	0.008	0.0088	0.019	0.0036	0.012	(0.10)	0.028	0.011	0.009	0.023
VS 3132-85	(0.0038)	0.007	0.057	(0.006)	0.014	0.0048	0.0072	0.0077	(0.027)	0.013	0.018	0.012	0.022
VS 5371-90	0.0020	0.007	0.15	0.033	0.0080	0.014	0.010	0.0046	0.17	0.034	0.0085	0.0090	0.010
VS 3131-85	(0.0016)	0.007	0.062	(0.006)	0.0068	0.0037	0.0040	0.0061	(0.037)	0.025	0.011	0.005	0.013

continued — analysis listed in mg/kg

Number	Ag	Au	Be	Cd	Co	Cs	Ga	Ge	La	Li	Mo	Nb	Nd	Pb	Sb	Sc	Sm	Sn	Th	U	Y	Yb
VS 3133-85	(0.8)	.	3.7	(1.5)	13	5.8	16	1.4	61	37	10	17	.	58	(15)	17	.	5	.	.	26	3.3
VS 3132-85	(0.17)	.	2.8	(0.2)	30	4.1	16	1.6	43	71.6	2.5	13	.	23	(1.9)	20	.	3.9	.	.	30	4.3
VS 5371-90	.	0.004	1.6	.	30	3.0	11	.	15	18	2.8	10	13	24	.	17	2.5	3.2	5	1.5	16	2.2
VS 3131-85	(0.2)	.	2.4	(2.3)	21	4	11	(1.2)	(38)	96	2.4	11	.	20	.	11	.	5	.	.	22	(2.8)

CRM SLATE

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
GYW TB2	60.4	20.5	.	0.20	5.4	6.95T	3.6+	0.86	1.86	0.047	1.29	0.095	.	0.93	3.46
GUW TB	60.23	20.64	0.14	.	5.43	6.90T	3.78+	3.87	(1.93)	(0.052)	1.32	0.097	.	0.93	.
JSl-1	59.47	17.60	(0.769)	1.479	4.523	1.875	+3.92 -0.654	2.845	2.413	0.0599	2.184	0.202	.	0.725	.
JSl-2	59.45	18.17	(1.236)	1.885	5.048	0.959	+4.158 -0.362	3.008	2.385	0.0818	1.344	0.164	0.1467	0.754	.
VB 8-3-05	37.0	12.91	.	16.44	.	5.29	.	3.05	2.28	0.037	0.57	.	2.22	0.75	.

continued analysis listed in mg/kg

Number	As	B	Ba	Be	Ce	Co	Cr	Cs	Cu	Dy	Eu	F	Ga	Hf	Ho	La	Li	Lu	Nb	Nd
GYW TB2	.	.	649	.	.	14	92	11	49	.	.	.	.	.	.	.	109	.	.	.
GUW TB	10.5	90	780	4.1	104	14	82	9	49	.	1.8	740	25	5.0	.	61	111	0.45	.	50
JSl-1	14.9	.	305	2.28	60.6	15.5	60.9	7.60	40.8	(5.11)	1.22	598	.	4.63	0.688	29.3	(50.7)	0.442	9.53	28.8
JSl-2	11.4	.	302	2.68	69.6	15.7	64.7	8.24	44.5	4.71	1.14	678	.	5.54	(0.671)	32.7	52.6	0.404	12.3	32.0
VB 8-3-05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	U	V	W	Y	Yb	Zn	Zr	Units
GYW TB2	39	.	.	185	.	.	.	5	159	.	.	.	.	96	.	.	3.8	94	180	50 g
GUW TB	40	8	.	(180)	(3.4)	16	8.4	6	160	1.4	.	18	.	107	2.2	39	3.3	94	180	25 g
JSl-1	37.6	17.4	6.07	117	.	16.7	6.02	.	193	0.842	0.717	9.97	2.63	131	.	30.0	2.81	108	174	100 g
JSl-2	40.6	19.7	(6.44)	118	.	16.8	5.95	.	230	1.04	0.727	11.5	2.92	122	.	31.3	3.15	101	191	100 g
VB 8-3-05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g

CRM SOIL

analysis listed in mass %

Number	Si	Al	Ca	Fe	K	Mg	Mn	N	Na	P	Ti	Units
PM BPGM-1	41.6	2.29	0.28	0.062	1.30	0.130	0.02384	.	0.37	0.045	(0.185)	100 g
PM PL-1	40.2	2.85	0.303	0.820	1.53	0.16	0.03945	.	0.51	0.044	0.32	100 g
SRM 2711a	31.4	6.72	2.42	2.82	2.53	1.07	0.0675	.	1.20	0.0842	0.317	50 g
GBW 08302	30.57	7.11	2.59	3.34	2.12	1.53	0.0677	0.128	1.52	0.086	0.40	15 g
NCS DC85302	28.08	5.88	5.32	3.02	1.68	1.57	0.0636	.	1.37	0.0923	0.457	2 g
NCS DC85301	27.80	6.04	5.82	2.94	1.94	1.56	0.0644	.	1.32	0.0661	0.359	15 g
CAN SO-3	15.86	3.06	14.63	1.51	1.16	4.98	0.052	.	0.74	0.048	0.20	200 g
BCR 142R	.	.	.	.	.	.	0.0970	.	.	.	.	40 g
ERM-CC690	.	.	.	.	.	.	.	.	.	.	.	70 g

continued analysis listed in mg/kg

Number	As	Ba	Be	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Eu	Ga	Gd	Hf	Hg	La	Li	Lu
PM BPGM-1	.	283	.	.	.	.	(2.8)	(26.3)	.	5.0	(1.7)	.	(4.7)	.	(7.0)	.	13.7	(8.0)	.
PM PL-1	.	354	.	.	.	.	(3.9)	49.6	.	6.2	(2.8)	.	6.0	.	(13.8)	.	21.5	(10.7)	.
SRM 2711a	107	730	.	.	54.1	(70)	9.89	52.3	(6.7)	140	(5)	(1.1)	.	(5)	(9.2)	7.42	(38)	.	(0.5)
GBW 08302	3.8	(509)	2.96	(1.3)	0.081	83.6	13.1	60.8	(7.3)	24.6	(5)	1.4	.	.	(7.3)	(0.018)	41.9	.	(0.48)
NCS DC85302	.	467	.	.	.	.	.	.	.	27	.	.	.	.	.	.	.	.	.
NCS DC85301	.	499	.	.	.	.	.	.	.	21	.	.	.	.	.	.	.	.	.
CAN SO-3	.	296	.	.	.	.	8	26	.	17	.	.	.	.	.	0.017	.	.	.
BCR 142R	.	.	.	.	0.34	.	12.1	(113)	.	69.7	.	.	.	.	.	0.067	.	.	.
ERM-CC690	.	.	.	.	.	49.1	.	.	.	.	2.90	.	.	3.2	.	.	24.4	.	.

Number	Nb	Nd	Ni	Pb	Rb	Sb	Sc	Se	Sm	Sr	Ta	Tb	Th	Tm	U	V	Y	Yb	Zn	Zr
PM BPGM-1	(5.3)	(12.5)	(5.3)	14.2	.	.	2.5	.	(2.0)	53.0	.	.	(4.2)	.	.	18.7	.	(1.1)	22.9	278.4
PM PL-1	(9.95)	16.4	(7.4)	19.6	.	.	(3.8)	.	(3.4)	67.4	.	.	6.3	.	.	24.1	.	(2.0)	30.0	634.4
SRM 2711a	.	(29)	21.7	0.140%	(120)	23.8	(8.5)	(2)	5.93	242	(1)	(0.8)	(15)	.	3.01	80.7	.	(3)	414	.
GBW 08302	.	42.3	31.1	14.2	135	(0.4)	10.8	0.16	7.1	163	(1.1)	(0.9)	17.6	.	3.84	77.5	.	3.1	58.0	.
NCS DC85302	.	.	33	.	.	.	(11)	.	.	253	.	.	.	.	.	.	.	.	80	.
NCS DC85301	.	.	31	.	.	.	(10)	.	.	276	.	.	.	.	.	.	.	.	62	.
CAN SO-3	.	.	16	14	39	.	.	.	.	217	.	.	.	.	.	38	.	.	52	.
BCR 142R	.	.	64.5	40.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(101)	.
ERM-CC690	.	19.1	.	.	.	.	7.9	.	3.5	.	.	0.50	7.6	0.232	1.90	.	.	1.57	.	.

CRM SOIL SET

available in SET/6 ONLY analysis listed in mg/kg% 25 g units

Number	As	Cd	Cr	Hg	Pb	Se
JSAC 0466	1093	1199	1483	113.5	1214	1175
JSAC 0465	550	607.4	738	57.8	612.4	587
JSAC 0464	271.1	301.0	499	28.6	302.7	291.9
JSAC 0463	137.6	146.8	244	14.76	151.6	141.5
JSAC 0462	71.5	74.2	149.6	7.27	73.7	71.6
JSAC 0461	21.53	(0.30)	97.2	0.075	24.4	(0.44)

CRM SOIL

analysis listed in mass % 100 g units

Number	Al_2O_3	T.C	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	T.S	SiO_2	TiO_2	LOI
JSo-1	18.06	8.91	2.55	2.52	8.58	11.38	+7.88	0.34	2.11	0.197	0.67	0.48	0.20	38.37	1.23	33.49
USZ 15-94	14.84	.	2.66	(1.44)	5.75	.	-(4.97)	2.47	1.65	0.08	3.14	0.16	.	62.51	0.86	(5.29)
USZ 16-94	(14.11)	.	2.78	1.22	(5.18)	.	.	2.61	1.84	(0.08)	3.07	(0.18)	.	63.18	0.88	(4.53)

continued analysis listed in mg/kg

Number	As	B	Ba	Be	Co	Cr	Cs	Cu	In	Li	Ni	Pb	Rb	Sb	Sr	Te	V	Y	Zn	Zr
JSo-1	8.1	12.0	267	0.69	32	71	1.5	169	0.086	11.2	39	13	14.5	0.38	196	0.085	300	24.9	105	96
USZ 15-94	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 16-94	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM SOIL

analysis listed in mass % 100 g units

Number	Type	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	As	B
VS 2498-83	Sandy, Turf-Ash	91.24	3.36	0.27	0.99	1.23	0.13	0.011	0.51	0.036	0.29	0.0003	0.003
VS 2499-83	Sandy, Turf-Ash	91.24	3.36	0.27	0.99	1.23	0.13	0.011	0.51	0.036	0.29	0.0017	0.003
VS 2500-83	Sandy, Turf-Ash	91.24	3.36	0.27	0.99	1.23	0.13	0.011	0.51	0.036	0.29	0.007	0.003
VS 2507-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.0008	0.0056
VS 2508-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.0021	0.0056
VS 2509-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.004	0.0056
VS 2501-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.0010	0.006
VS 2502-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.003	0.006
VS 2503-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.005	0.006
VS 2504-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.0013	0.0063
VS 2505-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.0029	0.0063
VS 2506-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.006	0.0063

continued analysis listed in mass % except * which is mg/kg

Number	Ba	Be*	Cd*	Ce	Co	Cr	Cs*	Cu	F	Ga*	Hg*	La*	Li	Mo*
VS 2498-83	0.031	1.1	0.1	0.0017	0.00020	0.010	1.6	0.0009	.	5	0.03	10	0.00035	1.5
VS 2499-83	0.031	10	1.3	0.0017	0.0045	0.010	1.6	0.010	.	5	0.13	10	0.00035	7
VS 2500-83	0.031	25	4	0.0017	0.013	0.010	1.6	0.026	.	5	0.3	10	0.00035	12
VS 2507-83	0.050	2.0	0.10	0.007	0.0009	0.0083	4	0.0025	0.028	11	0.05	36	0.0023	1.2
VS 2508-83	0.050	9	1.8	0.007	0.0046	0.0083	4	0.011	0.028	11	0.21	36	0.0023	6
VS 2509-83	0.050	24	4.5	0.007	0.013	0.0083	4	0.027	0.028	11	0.4	36	0.0023	11
VS 2501-83	0.027	1.6	0.12	0.007	0.0014	0.018	9	0.0047	0.04	15	0.08	30	0.005	3
VS 2502-83	0.027	10	2.6	0.007	0.0063	0.018	9	0.017	0.04	15	0.26	30	0.005	8
VS 2503-83	0.027	25	5	0.007	0.015	0.018	9	0.031	0.04	15	0.4	30	0.005	13
VS 2504-83	0.050	2.2	0.3	0.006	0.0012	0.0084	5	0.0034	0.05	13	0.025	29	0.0032	1.4
VS 2505-83	0.050	8	2.1	0.006	0.0057	0.0084	5	0.012	0.05	13	0.18	29	0.0032	6
VS 2506-83	0.050	26	5.5	0.006	0.015	0.0084	5	0.029	0.05	13	0.4	29	0.0032	13

Number	Nb*	Ni	Pb	Rb*	S	Sc*	Se*	Sn	Sr	V	Y*	Yb*	Zn	Zr
VS 2498-83	12	0.0010	0.0008	32	.	2.6	(0.8)	0.00019	0.0069	0.0014	13	1.5	0.0010	0.035
VS 2499-83	12	0.0087	0.0087	32	.	2.6	(0.8)	0.0019	0.0069	0.0014	13	1.5	0.014	0.035
VS 2500-83	12	0.029	0.025	32	.	2.6	(0.8)	0.006	0.0069	0.0014	13	1.5	0.043	0.035
VS 2507-83	14	0.0032	0.0018	88	0.05	11	(3)	0.0003	0.011	0.0072	31	4.1	0.0056	0.047
VS 2508-83	14	0.011	0.009	88	0.05	11	(3)	0.0020	0.011	0.0072	31	4.1	0.018	0.047
VS 2509-83	14	0.030	0.026	88	0.05	11	(3)	0.006	0.011	0.0072	31	4.1	0.046	0.047
VS 2501-83	25	0.0054	0.0023	80	0.04	15	(3)	0.0005	0.005	0.018	27	3.6	0.0087	0.034
VS 2502-83	25	0.016	0.015	80	0.04	15	(3)	0.0022	0.005	0.018	27	3.6	0.027	0.034
VS 2503-83	25	0.038	0.028	80	0.04	15	(3)	0.006	0.005	0.018	27	3.6	0.061	0.034
VS 2504-83	13	0.0045	0.0017	81	0.04	14	(1)	0.0004	0.031	0.009	26	3.3	0.0070	0.019
VS 2505-83	13	0.013	0.010	81	0.04	14	(1)	0.0020	0.031	0.009	26	3.3	0.017	0.019
VS 2506-83	13	0.032	0.028	81	0.04	14	(1)	0.006	0.031	0.009	26	3.3	0.039	0.019

CRM SOIL

analysis listed in mass % (t) = Total 100 g units

Number	Type	SiO_2	Al_2O_3	CO_2	CaO	Cr_2O_3	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
NCS DC85112	Agricultural	83.34	8.89	.	(0.16)	.	.	(t)1.34	0.65	(0.20)	0.015	(0.038)	0.124	(0.014)	0.22	4.86
VS 5360-90	Sod-Pozolic	78.3	9.58	.	0.82	.	0.5	3.00	2.48	0.77	0.070	1.15	0.075	0.03	0.84	2.6
SARM 42	Sedimentary	74.09	10.03	.	0.89	0.63	(4.0)	4.68	0.45	1.92	0.10	(0.15)	(0.03)	(0.02)	0.36	.
NCS DC85111	Agricultural	69.68	14.58	.	(0.22)	.	.	(t)5.21	1.08	0.54	0.029	(0.090)	0.122	(0.014)	0.96	7.52
VS 5359-90	Chernozemic	69.4	10.30	.	1.62	.	.	3.83	2.27	1.03	0.077	0.80	0.18	0.04	0.75	9.3
VS 5358-90	Light Chestnut	65.5	12.45	1.2	2.83	.	.	4.90	2.58	1.95	0.090	1.16	0.22	0.03	0.74	6.7
NCS DC85107	Agricultural	65.37	15.06	.	1.68	.	.	(t)4.98	2.72	1.62	0.094	2.48	0.120	(0.013)	0.74	4.83
NCS DC85108	Agricultural	63.06	12.76	.	4.57	.	.	(t)4.49	2.43	2.01	0.077	1.69	0.162	(0.017)	0.68	7.71
NCS DC85110	Agricultural	61.03	16.21	.	0.84	.	.	(t)6.20	2.45	1.90	0.050	0.99	0.098	(0.033)	0.92	9.01
NCS DC85109	Agricultural	53.72	14.74	.	7.93	.	.	(t)5.72	2.72	2.09	0.106	0.99	0.197	(0.019)	0.65	11.17

continued analysis listed in mg/kg except % which is mass %

Number	Ag	B%	Ba%	Be	C%	Ce%	Co	Cr%	Cs	Cu	F%	Ga	Ge	La	Li
NCS DC85112	.	(0.0020)	.	.	.	.	.	.	.	2.8	.	.	.	.	.
VS 5360-90	0.08	0.004	0.051	1.5	0.55	0.005	10	0.008	0.21	18	0.021	9	.	35	16
SARM 42	.	.	(0.0250)	.	.	(0.0030)	35	.	.	17	.	(12)	.	.	.
NCS DC85111	.	0.0071	.	.	.	.	.	.	.	32	.	.	.	.	.
VS 5359-90	0.10	0.005	0.040	2.0	3.6	0.006	10	0.008	4	23	0.027	10	1.0	35	25
VS 5358-90	0.12	0.007	0.046	2.1	1.7	0.006	14	0.014	4	30	0.034	13	1.6	38	28
NCS DC85107	.	0.0034	.	.	.	.	.	.	.	24	.	.	.	.	.
NCS DC85108	.	0.0054	.	.	.	.	.	.	.	25	.	.	.	.	.
NCS DC85110	.	0.0065	.	.	.	.	.	.	.	42	.	.	.	.	.
NCS DC85109	.	0.0075	.	.	.	.	.	.	.	29	.	.	.	.	.

Number	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr%	Th	V%	Y	Yb	Zn	Zr%
NCS DC85112	1.15	.	.	.	.	.	.	.	.	.	.	.	22	.
VS 5360-90	0.8	20	25	15	78	9	2.6	0.0012	.	0.0064	27	4	42	0.053
SARM 42	(5)	(8)	125	(10)	22	.	.	0.0037	(5)	0.0094	11	.	44	0.0192
NCS DC85111	1.47	.	.	.	.	.	.	.	.	.	.	.	81	.
VS 5359-90	1.0	15	33	16	84	12	3.5	0.014	.	0.0075	30	4	54	0.045
VS 5358-90	1.0	15	58	17	87	13	3.4	0.016	.	0.011	27	3	73	0.030
NCS DC85107	0.80	.	.	.	.	.	.	.	.	.	.	.	67	.
NCS DC85108	(0.82)	.	.	.	.	.	.	.	.	.	.	.	68	.
NCS DC85110	0.73	.	.	.	.	.	.	.	.	.	.	.	93	.
NCS DC85109	1.53	.	.	.	.	.	.	.	.	.	.	.	96	.

CRM SOIL (TILL) REFERENCE MATERIALS

analysis listed in mass % 100 g units

Number	SiO_2	Al_2O_3	CaO	Fe	Fe_2O_3	K_2O	MgO	Mn	MnO	Na_2O	P	P_2O_5	S	Ti	TiO_2	LOI 1000'C	LOI 500'C	Sum
CAN TILL-3	69.1	12.2	2.63	2.78	3.92	2.42	1.71	0.0520	0.06	2.64	0.0490	0.11	<0.05	0.2910	0.49	4.6	3.6	99.88
CAN TILL-4	65.0	14.4	1.25	3.97	5.63	3.45	1.25	0.0490	0.06	2.46	0.0880	0.20	0.08	0.4840	0.81	5.7	4.4	100.02
CAN TILL-1	60.9	13.7	2.72	4.81	6.82	2.22	2.15	0.1420	0.18	2.71	0.0930	0.22	<0.05	0.5990	0.98	7.3	6.3	99.90
CAN TILL-2	60.8	16.0	1.27	3.84	5.39	3.07	1.83	0.0780	0.10	2.19	0.0750	0.17	<0.05	0.5300	0.88	8.1	6.8	99.80

continued analysis in mg/kg except % for mass percent and * for parts per billion

Number	As	Au*	Ba	Be	Bi	Br	Ce	Co	Cr	Cs	Cu	Eu	Er	Hf	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Rb	Sb	Sc
CAN TILL-3	87	6	489	2.0	<5	4.5	42	15	123	1.7	22	<1.0	1.4	8	21	21	0.2	2	7	16	39	26	55	0.9	10
CAN TILL-4	111	5	395	3.7	40	8.6	78	8	53	12	237	<1.0	3.2	10	41	30	0.5	16	15	30	17	50	161	1.0	10
CAN TILL-1	18	13	702	2.4	<5	6.4	71	18	65	1.0	47	1.3	3.6	13	28	15	0.6	2	10	26	24	22	44	7.8	13
CAN TILL-2	26	2	540	4.0	<5	12.2	98	15	74	12.	150	1.0	3.7	11	44	47	0.6	14	20	36	32	31	143	0.8	12

continued

Number	Sm	Sr	Ta	Tb	Th	U	V	W	Y	Yb	Zn	Zr
CAN TILL-3	3.3	300	<0.5	<0.5	4.6	2.1	62	<1	17	1.5	56	230
CAN TILL-4	6.1	109	1.6	1.1	17.4	5.0	67	204	33	3.4	70	385
CAN TILL-1	5.9	291	0.7	1.1	5.6	2.2	99	<1	38	3.9	98	502
CAN TILL-2	7.4	144	1.9	1.2	18.4	5.7	77	5	40	3.7	130	390

partial extraction elements from dilute acid

Number	Ag	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Zn
CAN TILL-3	49	10	23	2.2	310	1	32	17	43
CAN TILL-4	3.4	6	252	3.5	260	15	14	37	62
CAN TILL-1	<0.2	12	49	3.4	1020	1	17	14	71
CAN TILL-2	12	12	152	3.4	570	13	30	24	116

continued partial extraction elements from concentrated acid

Number	Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe%	Hg*	Mn	Mo	Ni	Pb	V	Zn
CAN TILL-3	1.6	84	43	<3	<0.2	11	73	23	2.0	107	310	<2	32	16	33	43
CAN TILL-4	<0.2	102	71	44	<0.2	6	26	254	3.3	39	260	14	15	36	38	63
CAN TILL-1	0.2	13	84	<3	<0.2	12	30	48	3.1	92	950	<2	18	12	48	70
CAN TILL-2	0.2	22	95	4	0.3	13	40	149	3.2	74	530	11	31	21	38	116

CRM SOIL

analysis listed in mass %

Number	SiO_2	Al_2O_3	C(org)	CO_2	CaO	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	Na_2O	L.O.I.	Units
GBW 07403	74.72	12.24	0.50	(0.13)	1.27	0.50	2.00	(1.9)	3.04	0.58	2.71	2.67	70 g
GBW 07402	73.35	10.31	0.49	(0.97)	2.36	0.57	3.52	(2.9)	2.54	1.04	1.62	4.4	70 g
GBW 07409	73.28	12.91	.	.	1.35	.	2.08	.	3.37	0.49	3.31	.	50 g
GBW 07410	65.64	14.55	.	.	1.42	.	4.60	.	2.59	1.25	1.90	.	50 g
GBW 07401	62.60	14.18	1.80	1.12	1.72	(1.27)	5.19	(5.0)	2.59	1.81	1.66	(8.59)	70 g
GBW 07408	58.61	11.92	(0.31)	5.97	8.27	1.22	4.48	(3.3)	2.42	2.38	1.72	9.12	70 g
GBW 07406	56.93	21.23	0.81	(0.084)	0.22	(0.57)	8.09	(8.9)	1.70	0.34	0.19	(10.0)	70 g
GBW 07405	52.57	21.58	(0.32)	(0.10)	(0.095)	(0.22)	12.62	(8.8)	1.50	0.61	0.12	(9.1)	70 g
GBW 07404	50.95	23.45	0.62	(0.12)	0.26	(0.41)	10.30	(10.1)	1.03	0.49	0.11	(10.9)	70 g
GBW 07411	47.96	12.04	.	.	4.33	.	7.97	.	2.03	3.71	1.10	.	50 g
GBW 07407	32.69	29.26	0.64	(0.11)	0.16	(1.05)	18.76	(13.7)	0.20	0.26	0.074	(14.3)	70 g

continued analysis listed in mg/kg except * which is ng/g

Number	Ag	As	Au*	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu
GBW 07403	0.091	4.4	.	23	1210	1.4	0.17	4.3	0.059	39	(60)	5.5	32	3.2	11.4
GBW 07402	0.054	13.7	(1.7)	36	930	1.8	0.38	4.5	0.071	402	(56)	8.7	47	4.9	16.3
GBW 07409	0.067	2.9	.	13.8	693	2.1	0.10	(1.2)	0.068	58.9	(57.04)	4.9	26.4	3.3	4.9
GBW 07410	0.11	10.5	.	38.3	623	2.6	0.37	(5.0)	0.090	76.6	(45.6)	12.8	66.0	7.9	23.2
GBW 07401	0.35	34	(0.55)	50	590	2.5	1.2	2.9	4.3	70	66	14.2	62	9.0	21
GBW 07408	0.060	12.7	(1.4)	54	480	1.9	0.30	(2.6)	0.13	66	(70)	12.7	68	7.5	24.3
GBW 07406	0.20	220	(9.0)	57	118	4.4	49	(7.2)	0.13	66	98	7.6	75	10.8	390
GBW 07405	4.4	412	260	53	296	2.0	41	(1.8)	0.45	91	(70)	12	118	15	144
GBW 07404	0.070	58	(5.5)	97	213	1.85	1.04	4.0	0.35	136	(36)	22	370	21.4	40
GBW 07411	5.4	205	.	63.9	550	2.3	1.7	(3.1)	28.2	66.3	(101)	11.6	59.6	9.3	65.4
GBW 07407	0.057	4.8	(0.8)	(10.5)	180	2.8	0.20	5.2	0.080	98	100	97	410	2.7	97

Number	Dy	Er	Eu	F	Ga	Gd	Ge	Hf	Hg*	Ho	I	In	La	Li	Lu
GBW 07403	2.6	1.5	0.72	246	13.7	2.9	1.17	6.8	60	0.53	1.3	0.031	21	18.4	0.29
GBW 07402	4.4	2.1	3.0	2240	12	7.8	1.2	5.8	15	0.93	1.8	0.09	164	22	0.32
GBW 07409	3.2	(1.8)	0.97	215	14.6	3.9	1.2	.	15	(0.66)	(0.44)	(0.032)	31.3	14.3	0.27
GBW 07410	(5.3)	(2.9)	1.2	438	18.8	5.6	(1.6)	.	66	(1.1)	(2.6)	(0.07)	37.6	33.2	0.46
GBW 07401	4.6	2.6	1.0	506	19.3	4.6	1.34	6.8	32	0.87	1.9	0.08	34	35	0.41
GBW 07408	4.8	2.8	1.2	577	14.8	5.4	1.27	7.0	17	0.97	1.6	(0.044)	36	35	0.43
GBW 07406	3.3	2.2	0.66	906	30	3.4	3.2	7.5	72	0.69	19.4	0.84	30	36	0.42
GBW 07405	3.7	2.4	0.82	603	32	3.5	2.6	8.1	290	0.8	3.8	4.1	36	56	0.42
GBW 07404	6.6	4.5	0.85	540	31	4.7	1.9	14	590	1.46	9.4	0.12	53	55	0.75
GBW 07411	(4.4)	(2.4)	1.1	624	17.3	4.6	(1.3)	.	150	(0.88)	(2.6)	(0.38)	32.8	29.4	0.36
GBW 07407	6.6	2.7	3.4	321	39	9.6	1.6	7.7	61	1.1	19	0.10	46	19.5	0.35

Number	Mn	Mo	N	Nb	Nd	Ni	P	Pb	Pr	Rb	S	Sb	Sc	Se	Sm	Sn
GBW 07403	304	0.30	640	9.3	18.4	12	320	26	4.8	85	120	0.45	5.0	0.094	3.3	2.5
GBW 07402	510	0.98	630	27	210	19.4	446	20	57	88	210	1.3	10.7	0.16	18	3.0
GBW 07409	262	0.43	(520)	13.0	26.0	9.3	318	16.3	(7.1)	97.4	(97.0)	0.21	4.8	(0.044)	4.9	1.4
GBW 07410	706	0.84	(1200)	17.1	34.4	27.6	439	29.2	(8.8)	109	(174)	0.93	11.4	0.28	6.6	4.2
GBW 07401	1760	1.4	1870	16.6	28	20.4	735	98	7.5	140	310	0.87	11.2	0.14	5.2	6.1
GBW 07408	650	1.16	370	15	32	31.5	775	21	8.3	96	120	1.0	11.7	0.12	5.9	2.8
GBW 07406	1450	18	740	27	21	53	303	314	5.8	237	260	60	15.5	1.34	3.8	72
GBW 07405	1360	4.6	610	23	24	40	390	552	7.0	117	410	35	17	1.6	4.0	18
GBW 07404	1420	2.6	1000	38	27	64	695	58	8.4	75	180	6.3	20	0.64	4.4	5.7
GBW 07411	9700	1.5	(3200)	15.1	27.4	24.2	1400	2700	(7.5)	111	(999)	9.2	11.0	0.51	5.4	64.3
GBW 07407	1780	2.9	660	64	45	276	1150	14	11	16	250	0.42	28	0.32	10.3	3.6

Number	Sr	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
GBW 07403	380	0.76	0.49	0.040	6.0	2240	0.5	0.28	1.3	36	0.95	15	1.7	31	246
GBW 07402	187	0.75	0.97	(0.035)	16.6	2710	0.62	0.42	1.4	62	1.08	22	2.0	42	219
GBW 07409	270	.	0.55	(0.024)	8.4	2500	0.58	0.28	1.6	34.7	0.98	16.9	1.8	34.2	300
GBW 07410	188	.	0.85	(0.035)	12.0	4600	0.62	0.48	2.4	82.7	5.0	27.4	3.1	72.8	337
GBW 07401	155	1.4	0.75	(0.047)	11.6	4830	1.0	0.42	3.3	86	3.1	25	2.7	680	245
GBW 07408	236	1.05	0.89	0.046	11.8	3800	0.59	0.46	2.7	81	1.7	26	2.8	68	229
GBW 07406	39	5.3	0.61	(0.4)	23	4390	2.4	0.40	6.7	120	90	19	2.7	97	220
GBW 07405	42	1.8	0.7	(4.0)	23	6290	1.6	0.41	6.5	166	34	21	2.8	494	272
GBW 07404	77	3.1	0.94	(0.15)	27	10800	0.94	0.70	6.7	247	6.2	39	4.8	210	500
GBW 07411	130	.	0.70	(0.055)	12.6	4100	(1.7)	0.40	3.3	8.5	6.9	24.2	2.5	3800	192
GBW 07407	26	3.9	1.3	(0.047)	9.1	20200	(0.21)	0.42	2.2	245	1.2	27	2.4	142	318

CRM SOIL - CONTAMINATED VS. UNCONTAMINATED

certified analysis listed in mg/kg T = Total AN: 80 g units JSAC: 50 g units

Number	As	B	Ba	Be	Cd	Co	Cr	Cu	F	Hg	Mn	Ni	Pb	Se	V	Zn	Type
AN 7004	49.6	.	(568)	4.17	1.52	20.0	82.2	183	.	0.223	869	33.3	93.4	.	126	227	Silty Clay Loam
AN 7003	(16.7)	.	(495)	2.18	0.32	11.5	79.8	29.1	.	0.096	600	31.3	33.5	.	76.2	81.0	Silty Clay Loam
JSAC 0401	10.62	.	.	5.28	4.25	.	50.4	15.3	.	.	266	18.9	26	0.27	65.0	66.8	Brown Forest Soil
JSAC 0411	11.3	.	.	1.04	0.274	.	23.5	26.7	.	.	943	11	18.9	1.32	68.6	64.6	Volcanic Ash Soil
AN 7002	32.4	.	(987)	8.77	0.31	12.6	179	29.3	.	0.090	587	42.0	58.9	.	54.9	69.0	Light Sandy
AN 7001	(12.3)	.	(970)	3.32	0.32	9.66	89.6	30.8	.	0.087	540	31.9	43.8		58.7	120	Light Sandy
JSAC 0402	41.6	115	.	.	18.5	.	90.5 T	31.3	(132)	1.3	265	29.8	45.2	17.0	119.3	100.7	Brown Forest Soil
JSAC 0403	199	269	.	.	183	.	257 T	26.2	269	11.1	252	26.2	224	169	101	91.8	Brown Forest Soil

continued informational analysis listed in mass %

Number	Quality	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	TiO_2
AN 7004	Contaminated	64.35	13.10	2.07	5.82	2.55	1.29	0.72	0.45	1.32
AN 7003	Uncontaminated	68.80	12.30	1.38	4.15	2.21	1.02	0.74	0.16	0.68
JSAC 0401	Blended	.	.	.	.	.	.	.	.	.
JSAC 0411	Unblended	.	.	.	.	.	.	.	.	.
AN 7002	Contaminated	66.21	14.02	1.20	3.77	5.20	1.90	1.45	0.54	0.45
AN 7001	Uncontaminated	65.06	15.41	1.50	4.73	3.16	1.27	2.35	0.34	0.52
JSAC 0402	Blended	.	.	.	.	.	.	.	.	.
JSAC 0403	Unblended	.	.	.	.	.	.	.	.	.

RM SOIL - CONTAMINATED

typical analysis listed in mass % except * which is mg/kg RT 021: 100 g RT 022: 30 g all others: 50 g units

Number	PH	CN*	Al	Ba	Ca	Cu	Fe	K	Mg	Na	Pb	Sb	Si	Sr	Zn
RT 021	9.76	.	0.2730	0.0586	0.5430	0.4790	0.6480	0.1010	(0.2370)	0.0380	(14.5000)	0.4960	.	.	0.0546
RT 051	8.31	.	0.5530	0.0145	0.1220	0.00585	0.4520	0.1690	0.0925	0.3630	0.00441	0.00274	0.1020	0.00938	0.00440
RT 044	8.09	.	0.3540	0.0145	20.6000	0.00571	0.3180	0.1480	0.8920	0.0651	0.00675	0.0106	0.0991	0.4520	0.0114
RT 022	7.79	26.6	1.0100	0.0109	2.7200	0.00124	1.3600	0.3170	0.9520	0.0268	0.0415	(<0.00002)	(0.0080)	(0.00544)	0.00457
RT 023	7.40	.	0.8470	0.00755	0.5420	0.000890	1.0700	0.2230	0.3060	0.0296	0.0213	.	(0.0353)	0.00326	0.00938
RT 024	7.39	.	0.8680	0.00796	0.5530	0.000870	1.0200	0.2100	0.2940	0.0287	0.00157	(0.000117)	(0.0404)	0.00354	0.00373
RT 028	7.35	.	0.7560	0.00732	0.5880	0.000851	1.0000	0.2050	0.3000	0.0231	0.00104	.	(0.0796)	(0.00385)	0.00750
RT 025	7.21	.	0.7640	0.1840	2.8300	0.000776	0.9440	0.1990	0.4380	0.0313	0.1450	(<0.00032)	0.0171	(0.0408)	0.00518
RT 027	7.17	.	0.8540	0.0166	0.5970	0.000987	1.1200	0.2120	0.2760	0.0241	0.00519	0.000328	(0.0340)	0.00430	0.00513
RT 030	6.54	(10.4)	0.4811	0.00561	1.4200	0.000568	0.8320	0.1480	0.2470	0.0997	0.000713	(0.000232)	(0.0169)	(0.00544)	0.00748
RT 036	4.34	.	0.5320	0.00614	1.4300	0.00664	0.8210	0.3560	0.2590	0.1950	0.0132	(0.000159)	.	.	0.0182
RT 026	4.29	.	1.7700	0.0214	0.6220	0.00188	2.1900	0.3600	0.2840	0.0119	0.00256	(<0.00032)	(0.0166)	0.00384	0.0140
RT 020	2.96	.	0.1760	0.00248	2.5600	0.0729	19.2000	(0.0857)	0.2690	(0.00792)	0.5110	0.000838	.	(0.00247)	0.3010
RT 039	2.94	.	1.7600	0.1010	1.3300	0.0171	1.3300	0.1830	0.4840	0.0602	0.0178	0.00706	(0.1640)	0.0526	0.0374
RT 049	2.23	.	0.0560	0.00127	0.4790	0.00885	0.9170	0.3020	0.0899	0.0665	0.0111	0.0123	0.0168	0.000862	0.0542
RT 042	1.76	.	1.6700	0.0763	0.6140	0.0128	1.2900	0.1900	0.3830	0.1520	0.0182	0.00681	(0.0717)	0.0761	0.0529

continued analysis listed in mg/kg

Number	Ag	As	B	Be	Cd	Co	Cr	F	Hg	Mn	Mo	Ni	Se	Sn	Ti	Tl	V
RT 021	6.50	24.8	.	.	1.20	(2.7)	10.7	.	4.70	174	.	12.6	.	304	.	(6)	(8.70)
RT 051	79.5	22.7	11.8	1.09	42.2	65.1	246	.	29.9	757	61.0	96.8	165	81.9	15.7	55.9	56.7
RT 044	114	57.4	113	37.3	63.1	46.0	84.1	.	9.41	200	14.5	76.4	8.11	94.8	138	65.3	82.1
RT 022	(<0.5)	5.40	(15.5)	0.500	3.10	5.70	18.8	.	(0.02)	318	(<0.8)	15.8	(0.3)	.	.	(<0.2)	23.2
RT 023	.	380	(11.0)	0.430	0.92	4.68	31.0	.	77.8	206	.	11.0	105	.	.	111	21.7
RT 024	13.3	3.42	7.22	0.430	2.15	.	25.4	.	0.710	199	0.580	15.0	(0.54)	.	.	(13.6)	20.8
RT 028	.	3.83	(12.7)	0.380	0.500	4.30	19.0	.	.	209	.	13.4	.	.	.	.	19.2
RT 025	132	339	(17.2)	0.330	369	4.07	441	.	99.8	173	(<0.8)	12.2	518	.	.	(<4.8)	19.3
RT 027	5.98	12.4	(18.1)	2.73	12.0	4.7	26.9	.	3.80	259	(1.05)	10.5	14.0	.	.	(4.81)	21.4
RT 030	(0.04)	13.1	(5.29)	5.97	58.4	.	43.8	(29.4)	6.55	127	8.78	6.63	18.5	.	.	.	29.0
RT 036	(0.335)	148	67.8	5.38	254	67.1	41.0	.	27.9	138	87.4	119	16.2	183	.	(0.347)	23.3
RT 026	(0.57)	5.41	(25.4)	18.0	11.7	6.77	27.2	.	2.42	633	(1.25)	14.4	(1.86)	.	.	(<4.8)	32.0
RT 020	38.5	400	.	.	15.4	4.51	13.6	.	1.12	945	.	16.9	6.57	.	.	5.91	6.47
RT 039	73.1	352	148	53.9	265	123	165	.	41.2	372	171	206	220	153	413	152	165
RT 049	125	65.3	59.0	60.5	80.0	84.0	355	.	13.5	636	98.6	344	7.21	236	47.1	125	57.8
RT 042	133	265	146	129	281	168	268	.	46.7	594	104	130	155	173	435	195	139

CRM SOIL - CONTAMINATED

analysis listed in mass % except as noted powder 75 g

Number	Hexavalent Cr	Cr	Fe	Mn	Al	Tot.Org.C	Ca	K	Mg	Na	Si	Ti	V	PH	Redox Potential
SRM 2701	0.05512	4.26	23.73	0.2137	(5.05)	(3.69)	(7.47)	(0.174)	(7.47)	(0.255)	(4.17)	(0.547)	(0.236)	9.6	(526 mV)

CRM SOIL - CONTAMINATED

analysis listed in mg/kg except % which is mass % 50 g units

Number	Ag	Al%	As	Au	B	Ba	Be	Br	Ca%	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Fe%	Ga	Gd
SRM 2710a (3.0)	(40)	5.95	1,540	(0.2)	(20)	792	.	.	0.964	12.3	(60)	5.99	(23)	(8.25)	342	(3)	.	(0.82)	4.32	.	
SRM 2780	(27)	8.87	48.8	(0.18)	.	993	.	.	0.195	12.1	(64)	(2.2)	(44)	(13)	215.5	.	.	.	2.784	(26)	.
IRNT SVP	(5)	7.48	14.0	.	(70)	315	(2)	(5)	6.34	0.285	(75)	15.6	75.3	(12)	30.9	(4)	.	(1)	3.73	.	(7)
IRNT SVM	(4)	8.96	13.6	.	(70)	582	(500)	(5)	0.692	0.214	(100)	15.4	79.8	(6)	30.0	(5)	.	(2)	3.73	.	(7)
IRNT SMS	(1)	5.77	9.36	.	(50)	(365)	(1)	(4)	0.490	0.198	(100)	11.9	87.4	(5)	21.2	(5)	.	(1)	2.70	.	(10)
SRM 2709a (3.0)	.	7.37	(10.5)	.	(74)	979	.	.	1.91	0.371	(42)	12.8	130	(5.0)	(33.9)	(3)	.	(0.83)	3.36	.	
SRM 2586 (5.8)	.	6.652	8.7	.	.	413	(1.4)	.	2.218	2.71	58	(35)	301	.	(81)	(5.4)	(3.3)	(1.5)	5.161	(14)	
SRM 2587	.	5.86	13.7	.	.	568	(9.2)	.	0.927	1.92	(57)	(14)	92	.	(160)	.	.	.	2.813	(13)	.

Number	Hf	Hg	Ho	K%	La	Li	Lu	Mg%	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb%	Pr	Rb	S%
SRM 2710a	(7)	9.88	.	2.17	30.6	.	(0.3)	0.734	0.214	.	0.894	.	(22)	(8)	0.105	0.552	.	(117)	.
SRM 2780	(4.4)	0.71	(0.84)	3.38	(38)	(18)	.	0.533	0.0462	(11)	0.221	(18)	(28)	(12)	0.0427	0.577	.	(175)	1.263
IRNT SVP	(10)	0.0874	.	2.63	(40)	(60)	(500)	1.19	0.0734	.	(0.45)	.	(40)	37.4	(0.000014)	0.00413	.	(150)	.
IRNT SVM	(10)	0.171	.	3.08	(60)	(30)	(500)	0.593	0.0897	.	(0.3)	.	(50)	30.8	(0.000013)	0.00196	.	(200)	.
IRNT SMS	(10)	0.0785	.	1.85	(40)	(20)	(500)	0.627	0.0910	.	(0.8)	.	(40)	40.0	(0.000010)	0.00189	.	(100)	.
SRM 2709a	(4)	(0.9)	.	2.11	(21.7)	.	(0.3)	1.46	0.0529	.	1.22	.	(17)	(85)	0.0688	0.00173	.	(99)	.
SRM 2586	.	0.367	(1.1)	0.976	29.7	(25)	.	1.707	0.1000	.	0.468	(6)	26.4	(75)	0.1001	0.0432	(7.3)	.	.
SRM 2587	.	0.29	.	1.583	(29)	(32)	.	0.6690	0.0651	.	1.127	(14)	(25)	(36)	0.0970	0.3242	.	.	.

Number	Sb	Sc	Se	Si%	Sm	Sr	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn%	Zr
SRM 2710a (200)	52.5	(9.9)	(1)	31.1	(4.0)	255	(0.9)	(0.5)	.	(18.1)	0.311	(1.52)	.	9.11	(82)	(190)	.	(2)	0.418	
SRM 2780 (176)	(160)	(23)	(5)	.	.	217	.	(0.58)	(5)	(12)	0.699	(5)	(0.4)	(4)	268	(24)	.	.	0.257	
IRNT SVP (200)	2.11	(10)	(150)	20	(5)	274	(1)	(1)	.	(10)	0.38	(<200)	.	(4)	89.7	(2)	.	(2)	0.0119	
IRNT SVM (350)	4.58	(15)	(300)	25	(10)	82.0	(1)	(1)	.	(20)	0.55	(<200)	.	(3)	98.3	(3)	.	(4)	0.00888	
IRNT SMS (500)	1.92	(10)	(200)	31	(7)	107	(1)	(1)	.	(10)	0.5	(<200)	.	(3)	(87.5)	(2)	.	(4)	0.00637	
SRM 2709a	1.55	(11.1)	(1.5)	30.3	(4)	239	(0.7)	(0.5)	.	(10.9)	0.336	(0.58)	.	(3.15)	110	.	.	(2)	(0.0103)	195
SRM 2586	.	(24)	(0.6)	29.15	(6.1)	84.1	.	(0.09)	.	(7)	0.605	.	(0.5)	.	(160)	.	(21)	2.64	0.0352	.
SRM 2587	.	(11)	.	33.13	.	126	.	.	.	(7.5)	0.3920	.	.	.	(78)	.	(15)	(1.6)	0.03358	.

RM STEATITE

analysis listed in mass % 25 or 100 g units

Number	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	Li_2O	MgO	Na_2O	TiO_2	LOI
CERAM 2CAS14	62.5	0.15	0.28	0.35	<0.01	<0.01	31.7	0.02	0.01	5.15

CRM SULPHUR IN VARIOUS FORMS - SEE ALSO “MULTI-METAL ORE”

analysis listed in mass % except * which is mg/kg

Number	Type	S	SO_4	Al	CO_2	Ca	Cu	Fe	H_2O	Mg	Pb	Si	SiO_2	Zn	Units
NCS DC71307	Sulphide	52.72	.	.	.	.	0.0431	46.08	.	.	(0.00234)	.	.	0.0219	5 g
CAN RTS-4	Ore Tailings	35.9	0.27	0.339	(<0.7)	0.327	0.0280	56.7	(0.16)	0.179	0.0060	0.998	.	0.0158	25 g
NCS DC71308	Sulphide	34.69	.	.	.	.	33.30	30.30	.	.	0.0128	.	.	0.30	10 g
CAN HCC-1	Concentrate	33.92	.	.	.	.	.	.	.	.	.	.	.	.	50 g
NCS DC71310	Sulphide	32.33	.	.	.	.	0.10	2.14	.	.	0.099	.	.	62.51	5 g
CAN WMS-1A	Sulphide	28.17	.	1.350	.	3.09	1.396	45.4	(0.2)	(0.331)	(0.0033)	(4.7)	.	(0.0130)	200 g
CAN INM-1	Concentrate	22.17	.	.	.	.	.	.	.	.	.	.	.	.	50 g
NCS DC71309	Sulphide	13.30	.	.	.	.	0.00624	0.012*	.	.	84.26	.	.	0.0533	10 g
CAN TLS-1	Concentrate	1.81	.	(6.92)	.	(4.73)	0.078	10.51	.	(3.45)	.	.	(51.87)	.	100 g
CAN RTS-1	Ore Tailings	1.66	1.26	4.26	(<0.1)	2.67	0.0595	19.64	(1.5)	2.67	0.0105	19.89	.	0.0553	100 g

continued analysis listed in mass %

Number	C	Cd	Co	K	P	Mn	Na	Ni	Sb	Sn	Ti
NCS DC71307	.	0.000071	(0.00039)	.	.	0.00289	.	0.00340	0.00011	(0.00027)	.
CAN RTS-4	(<1.5)	0.0005	0.0186	(0.04)	(0.02)	(0.015)	(0.07)	0.7940	.	.	(0.08)
NCS DC71308	.	0.00202	0.00751	.	.	0.00475	.	0.00413	(0.00027)	(0.00058)	.
CAN HCC-1	.	.	.	.	.	.	.	.	.	.	.
NCS DC71310	.	0.15	0.0491	.	.	0.0169	.	0.00432	0.0249	(0.00032)	.
CAN WMS-1A	(0.1)	(0.00014)	(0.145)	(0.0991)	(0.018)	(0.0600)	(0.0329)	3.02	(0.000692)	(0.00023)	(0.0840)
CAN INM-1	.	.	.	.	.	.	.	.	.	.	.
NCS DC71309	.	0.00165	(0.00004)	.	.	.	.	.	0.43	0.11	.
CAN TLS-1	.	.	(0.008)	(1.025)	.	.	(1.690)	0.151	.	.	.
CAN RTS-1	(<0.9)	0.0002	0.00166	(0.52)	(0.06)	(0.19)	(0.50)	0.00227	.	.	(0.40)

continued analysis listed in mg/kg

Number	Ag	As	Au	Ba	Bi	Cr	Ga	Ge	In	Pd	Pt	Se	Sr	Te	Tl	Zr
NCS DC71307	0.59	(14.4)	.	.	2.9	.	0.44	(0.2)	.	.	.	5.8	.	0.95	.	.
CAN RTS-4	(<2)	207	(0.21)	(27)	(3.3)	(100)	.	.	.	(0.15)	(0.55)	(100)	(12)	.	.	(10)
NCS DC71308	846	(3.1)	.	.	16.1	.	(0.3)	.	(66.6)	.	.	48.3	.	10.4	.	.
CAN HCC-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC71310	5.0	(3.3)	.	.	6.1	.	251	6.0	21.0	.	.	(3.0)	.	(0.3)	.	.
CAN WMS-1A	(3.7)	30.9	0.300	(70)	(1.2)	(68)	(4)	.	(0.2)	1.45	1.91	(87)	(31.3)	.	.	(20)
CAN INM-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC71309	0.97%	5.3	.	.	1.4	.	(0.3)	1.47	0.29	.	.	.	.	(0.07)	0.65	.
CAN TLS-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CAN RTS-1	(<3)	8.2	(2.62)	(123)	(81)	(50)	.	.	.	(<0.20)	(<0.70)	(40)	(60)	.	.	(110)

CRM SULPHUR ORE

Number	S%
GS902-1	34.45
GS309-4	34.42
GS902-4	33.04
GS904-1	32.50
GS308-6	32.46
GS903-9	31.77
GS900-1	31.68
GS904-10	30.30
GS908-4	30.08
GS304-7	30.05
GS398-9	29.61
GS309-7	29.21
GS398-3	29.16
GS997-1	28.51
GS305-8	28.44
GS309-6	28.40
GS399-10	28.22
GS901-5	27.50
GS999-8	26.67
GS900-2	26.62
GS300-5	26.54
GS906-10	25.94
GS301-2	25.86
GS300-10	25.65
GS903-7	25.21
GS300-7	24.85
GS997-7	24.46
GS307-8	23.98
GS301-10	22.55
GS900-7	22.53
GS907-10	21.94
GS904-2	21.73
GS301-4	21.69
GS303-3	21.02
GS303-2	18.51
GS998-1	18.41
GS309-5	18.16
GS308-8	16.43
GS309-8	15.78
GS997-2	15.36

CRM SULPHUR ORE

Number	S%
GS308-9	15.10
GS398-10	14.49
GS305-9	13.52
GS901-3	12.74
GS903-4	11.83
GS305-3	11.76
GS904-4	11.12
GS908-8	10.71
GS999-6	9.89
GS309-3	9.80
GS906-7	9.64
GS307-6	8.89
GS902-6	8.35
GS907-8	8.13
GS908-5	7.80
GS907-4	7.68
GS908-7	7.55
GS307-7	7.04
GS308-10	6.70
GS901-2	6.66
GS301-1	6.13
GS301-7	5.98
GS907-6	5.77
GS901-7	5.68
GS905-3	5.64
GS900-9	5.60
GS300-2	5.16
GS905-5	5.14
GS908-6	5.01
GS309-2	4.78
GS906-8	4.71
GS302-2	4.61
GS900-8	4.49
GS905-8	4.38
GS906-4	4.25
GS304-8	4.10
GS903-8	3.88
GS902-3	3.84
GS999-7	3.63
GS902-10	3.58

CRM SULPHUR ORE

Number	S%
GS998-7	3.43
GS304-10	3.36
GS301-3	3.31
GS901-1	3.20
GS399-7	3.09
GS907-5	2.90
GS907-7	2.82
GS997-5	2.79
GS903-3	2.54
GS903-2	2.53
GS999-9	2.39
GS906-3	2.36
GS902-7	2.32
GS399-5	2.29
GS305-1	2.20
GS903-5	2.14
GS300-9	2.09
GS997-9	2.00
GS302-5	1.98
GS302-9	1.94
GS307-5	1.92
GS997-10	1.74
GS305-6	1.71
GS901-8	1.65
GS300-4	1.43
GS305-7	1.41
GS305-5	1.41
GS906-1	1.33
GS907-1	1.30
GS998-4	1.17
GS398-2	1.10
GS998-5	1.04
GS307-3	1.03
GS907-2	0.98
GS903-10	0.93
GS900-3	0.92
GS902-8	0.89
GS907-9	0.79
GS907-3	0.78
GS305-2	0.76

CRM SULPHUR ORE

Number	S%
GS900-4	0.71
GS906-9	0.68
GS302-3	0.68
GS903-1	0.63
GS309-1	0.61
GS303-7	0.59
GS305-10	0.51
GS905-2	0.50
GS905-6	0.41
GS301-6	0.40
GS905-4	0.38
GS300-8	0.37
GS308-4	0.36
GS308-3	0.35
GS900-5	0.33
GS303-9	0.31
GS399-9	0.29
GS303-10	0.27
GS903-6	0.23
GS906-6	0.21
GS906-5	0.18
GS398-6	0.16
GS303-8	0.16
GS307-1	0.15
GS906-2	0.12
GS307-2	0.06

for all GS Sulfur Ore samples, unit size is 10 g powder

CRM SYENITE

analysis listed in mass % 100 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	Cl	F	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
SARM 2	63.63	17.34	0.09	0.68	.	.	0.30	1.11	.	.	15.35	0.46	.	0.43	.	.	.
JSy-1	60.02	23.17	.	0.25	.	.	.	.	0.084	.	4.82	0.016	0.0024	10.74	.	.	.
GBW 07109	54.48	17.72	0.26	1.39	0.059	0.048	1.23	6.04	.	2.38	7.48	0.65	0.12	7.16	0.018	0.011	0.48

continued analysis listed in mg/kg

Number	As	B	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge
SARM 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.27	.
JSy-1	.	.	15.7	.	.	.	.	2.6	.	2.0	0.69	1.3	0.37	0.30	0.16	23.5	7.0	0.95
GBW 07109	6.27	31.8	251	17.2	0.37	1.21	0.07	242	4.59	3.6	2.05	11.8	4.70	2.48	2.35	35.8	.	.

Number	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
SARM 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
JSy-1	1.2	.	0.094	.	.	1.2	.	0.076	.	0.51	1.2	1.1	4.9	0.32	66.3	0.15	.
GBW 07109	34.0	0.005	0.96	0.14	0.15	149	32.9	0.43	0.26	66.9	65.1	1.75	196	22.5	130	0.15	2.22

Number	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
SARM 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
JSy-1	.	0.27	0.17	19.3	.	.	.	0.23	.	0.053	0.20	2.1	.	2.6	0.41	3.2	70.2
GBW 07109	0.05	9.7	6.50	1160	1.96	1.02	0.012	79.3	0.76	0.46	14.6	179	1.24	24.7	2.56	112	1540

NEPHELINE SYENITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % GBW: 50 g units all others: 100 g units

#	Number	SiO_2	Al_2O_3	Ba	CO_2	CaO	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	Sr	TiO_2	LOI
1	GBW 03124	60.64	20.05	.	.	0.52	0.28	1.37	2.34	5.06	0.13	0.050	8.97	0.020	(0.011)	.	0.12	2.37
2	BCS 201a	57.3	23.54	.	.	1.07	.	0.12	.	8.90	0.025	.	7.53	0.025	.	.	0.05	0.76
1	VS 1345-78	53.57	20.92	0.13	.	1.47	1.27	4.79	1.06	5.91	0.50	0.21	9.96	0.140	0.017	0.19	0.86	1.15
1	USZ 45-2007	51.88	22.58	0.0447	(1.16)	2.28	0.80	2.63	.	9.10	0.24	0.14	6.78	0.04	.	0.01740	0.37	3.35
1	GBW 03125	39.42	29.67	.	2.97	5.98	1.24	0.33	1.78	4.72	0.92	0.031	12.59	0.072	(0.064)	.	0.14	.

continued analysis in mg/kg except % which is mass %

Numeber	As	Be	Ce	Cr	Cu	F%	Ga	La%	Li	Nb%	Pb	Rb%	Sn	Ta	Th	U	V	Y	Zn%	Zr%
GBW 03124	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BCS 201a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 1345-78	.	9.6	.	12	73	0.20	30	0.022	31	0.023	.	0.017	7.7	11	35	.	46	49	0.014	0.06
USZ 45-2007	23.8	.	30.8	44	(2.6)	(0.26)	23	0.0163	54	0.0040	114	0.0207	.	.	61.6	12.4	30	23	0.0098	0.0600
GBW 03125	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TALC

analysis listed in mass % JCRM: 50 g units BCS: 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	L.O.I.
CRM	sold in set/3 only, as grouped										
JCRM R903	2.447	0.998	0.564	0.007	31.84	(0.003)	0.029	0.051	55.76	0.075	8.23
JCRM R901	0.924	0.438	0.1224	0.004	31.22	0.004	0.054	0.195	59.77	0.019	6.14
JCRM R902	0.115	0.342	0.091	0.003	31.97	(0.002)	0.006	0.046	60.77	0.004	6.64
RM											
BCS 203a	0.30	0.25	0.22	<0.01	32.08	.	0.02	0.13	59.7	<0.01	6.78

CRM TANTALUM ORE

analysis listed in mass %

Number	Ta_2O_5	Ta	Al	Al_2O_3	BeO	Ca	CaO	Cs_2O	F	Fe	FeO	Fe_2O_3(T)	H_2O+	K	K_2O	Li_2O
NCS DC86315	1.02	.	.	14.58	0.00125	.	0.71	0.000814	0.019(F-)	.	0.26	0.68	0.56	.	4.11	0.0106
CAN TAN-1	0.288	0.2365	(8.2)	.	.	(0.5)	.	.	.	(0.2)	.	.	.	(1.5)	.	.
NCS DC86306	0.070	.	.	14.25	0.033	.	0.105	0.066	1.33	.	(0.026)	0.377	1.52	.	2.01	0.779
NCS DC86305	0.00886	.	.	14.28	0.033	.	0.107	0.064	1.32	.	(0.019)	0.324	1.52	.	2.04	0.790

continued analysis listed in mass %

Number	Mg	MgO	Mn	MnO	Na	Na_2O	Nb_2O_5	P_2O_5	Rb_2O	Si	SiO_2	Sn	TiO_2	W	LOI
NCS DC86315	.	0.093	.	0.45	.	4.40	0.52	(0.040)	0.0244	.	72.34	(0.000265)	0.039	0.000214	0.61
CAN TAN-1	(0.02)	.	(0.02)	.	(4.6)	.	.	.	.	(33.4)	.	(0.01)	.	.	.
NCS DC86306	.	0.048	.	0.144	.	3.68	0.43	0.348	0.241	.	74.98	(0.0063)	0.032	0.020	2.21
NCS DC86305	.	0.050	.	0.115	.	3.62	0.00423	0.347	0.244	.	75.06	(0.0052)	0.027	0.00164	2.21

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nd_2O_3	Pr_6O_{11}	RE_xO_y*	Sc_2O_3	Sm_2O_3	Tb_2O_3	Tb_4O_7	Tm_2O_3	Y_2O_3	Yb_2O_3	Units
NCSDC86315	16.5	4.72	2.65	0.13	3.47	0.88	7.65	0.37	7.84	1.91	81.0	2.14	2.48	.	0.72	0.38	29.9	2.37	100 g
CAN TAN-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	200 g
NCS DC86306	16.5	1.1	0.56	0.18	0.84	0.13	6.9	0.15	6.4	2.2	45.0	6.1	1.4	0.22	.	0.11	5.3	0.93	70 g
NCS DC86305	3.6	0.65	0.27	0.16	1.2	0.22	3.3	0.028	3.4	0.86	18.6	0.64	0.77	0.14	.	0.040	3.7	0.24	70 g

* RE_xO_y: Rare Earth Oxide

TITANIUM ORE

analysis listed in mass %

#	Number	Ilmenite	**TiO_2**	Al_2O_3	C	CO_2	CaO	Co_3O_4	Cr_2O_3	CuO	Fe	Fe_2O_3	K_2O	MgO	Mn	MnO
1	DSZU 123.22-95	.	**65.33**	3.17	.	.	0.51	.	1.32	.	16.10	.	.	0.53	.	0.92
2	OSO 1-88	.	**64.50**	2.15	.	.	.	.	.	.	18.40	.	.	.	.	.
1	DSZU 123.21-95	.	**59.48**	1.02	.	.	0.40	.	0.15	.	26.76	.	.	0.38	.	0.51
1	VS R31	.	**56.5**	1.99	.	.	.	.	2.59	.	24.4	.	.	.	.	.
1	SARM 59	.	**48.8**	0.61	.	.	0.05	.	0.10	.	.	50.3	.	0.56	.	1.05
2	DH 6705	.	**32.97**	3.52	0.149	0.061	0.890	0.024	0.113	0.016	38.38	.	0.097	2.82	0.101	.
2	DH 6704	.	**31.92**	4.64	.	0.160	1.30	0.023	0.109	0.020	36.23	.	0.127	2.81	0.097	.
2	OSO Ki-370-99	95.41	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Na_2O	NiO	P_2O_5	S	SiO_2	SrO	V_2O_5	ZnO	ZrO_2	LOI	$-H_2O$ 900'C	Units
DSZU 123.22-95	.	.	0.15	0.0090	1.45	.	0.18	.	.	.	.	100 g
OSO 1-88	.	.	.	.	1.17	.	.	.	.	.	.	80 g
DSZU 123.21-95	.	.	0.24	0.96	3.00	.	0.26	.	.	.	.	100 g
VS R31	.	.	0.25	.	1.24	.	.	.	.	.	.	100 g
SARM 59	.	.	.	.	0.75	.	0.25	.	.	(2.55)	.	100 g
DH 6705	.	0.036	0.031	0.245	5.53	0.013	0.291	0.020	0.049	.	0.49	100 g
DH 6704	0.642	0.038	0.025	0.311	7.93	.	0.286	0.019	.	.	0.502	100 g
OSO Ki-370-99	.	.	.	.	.	.	.	.	.	.	.	1 kg of ~3mm material

CRM TIN ORE

analysis listed in mass % NCS DC700: 100 g units NCS DC350: 70 g units

Number	Sn	Al_2O_3	As	CaO	Cu	F	Tot.Fe	K_2O	Mg	MnO	Mo	Na_2O	P	Pb	S	Sb	SiO_2	TiO_2	W	Zn
NCS DC70014	4.47	14.04	0.79	7.73	0.26	0.10	36.19	0.35	0.99	1.17	0.027	0.050	0.11	2.72	0.097	0.018	9.50	0.85	0.068	0.74
NCS DC35012	3.98	.	0.097	.	0.109	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC70015	1.27	.	0.78	.	0.32	.	.	.	.	.	0.033	.	.	2.82	0.082	0.012	.	.	0.015	0.91
NCS DC35011	0.737	.	0.046	.	0.077	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

CRM TIN AND TIN-TUNGSTEN ORE

Number	Sn	Fe	Cu	As	Bi	Zn	Pb	S	W	Ni	Si	Ti	Al	Ca	F	Units
BCR 010	76.59	.	.	.	.	.	.	.	.	.	.	.	.	.	.	225 g
IGS 26	33.36	12.20	2.11	.	.	.	.	.	13.63	.	.	.	.	.	.	45 g
BCS 355	31.42	17.08	0.085	0.14	0.015	0.059	0.012	0.50	0.35	0.0040	7.14	0.37	4.12	2.63	2.02	100 g

CRM TUNGSTEN ORE

analysis listed in mass % except * which is mg/kg CAN: 200 g GW: 10 g IGS: 65 g all others: 100 g

Number	W	WO_3	Ag*	As	Be	Bi	Cu	Fe	Ge*	Mo	Nb	P	Pb	S	Sn	Zn
VS 1710-79	.	71.96	.	.	.	0.146	.	.	.	.	.	.	.	.	.	.
SRM 2430	.	70.26	.	0.002	.	0.078	.	.	.	0.22	.	0.017	.	0.26	.	.
SRM 277	.	67.4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC70017	3.66	.	.	0.036	.	0.26	0.13	.	.	Li:0.018	0.010	.	0.081	0.83	0.017	0.032
CAN CT-1	1.04	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CAN BH-1	0.422	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GW-01	0.2787	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 7027-93	0.17	.	.	.	.	0.015	.	.	.	0.0093	0.0014	.	.	.	.	Zr:0.013
KZ 7026-93	0.11	1.2	.	.	0.0022	0.018	0.052	.	3.6	0.00098	0.0015	.	.	Sr:0.017	.	.
CAN TLG-1	0.083	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
IGS 27	0.036	.	.	.	.	.	.	1.76	.	0.29	.	.	.	.	.	.
VS 1712-79	.	6.00	150.3	.	0.021	1.30	0.077	.	3.9	0.26	.	.	0.77	.	0.89	0.28
VS 1714-79	.	1.04	10.3	.	.	0.089	.	.	.	0.041	.	.	.	.	0.113	.
VS 1715-79	.	0.60	.	.	0.013	0.054	0.020	.	3.1	0.026	.	.	0.049	.	0.068	0.038
VS 2040-81	.	0.49	.	.	.	0.0058	0.053	0.94	.	0.016	.	.	.	.	.	.
VS 2042-81	.	0.38	.	.	.	0.0032	0.105	4.17	.	0.039	.	.	.	.	.	.
VS 2039-81	.	0.22	.	.	.	0.023	0.27	2.47	.	0.0026	.	.	.	.	.	.
VS 1713-79	.	0.17	5.5	.	0.0058	0.015	.	.	2.9	0.011	.	.	.	.	0.028	.
VS 2041-81	.	0.076	.	.	.	0.0058	0.053	0.94	.	0.016	.	.	.	.	.	.
VS 1711-79	.	0.036	.	.	0.0022	0.0044	.	.	.	0.0026	.	.	.	.	0.0071	.

CRM TUNGSTEN ORE

analysis listed in mass % T = Total 100 g units

Number	WO_3	Al_2O_3	As	Bi	CaO	Cy	F	FeO	Fe_2O_3	K_2O	MgO	MnO	Mo	Na_2O	Pb	Rb	S	SiO_2
USZ 26-99	0.41	14.14	0.09	0.0067	1.95	.	.	3.72	5.59T	4.32	2.04	0.12	0.079	2.13	0.0076	0.106	.	64.87
GBW 07241	.	11.15	.	0.068	4.17	0.096	4.84	.	5.60	1.58	0.14	0.090	0.098	0.12	.	(0.05)	1.90	71.27
GBW 07240	.	8.24	0.18	0.011	37.73	0.79	9.91	.	7.79	1.94	1.45	0.97	.	0.16	0.26	(0.08)	3.12	13.27

analysis listed in mass % analysis listed in mg/kg except % which is mass %

Number	Sn	TiO_2	Zn	Ag	As	Cd	Ce	Co	Cu%	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La
USZ 26-99	(0.016)	0.82	0.017	.	.	.	.	11	0.022	.	.	.	.	.	.	.	.	.
GBW 07241	0.17	0.044	0.010	1.8	69.6	0.94	60.3	.	.	20.7	0.17	13.1	16.5	14.8	11.2	4.5	1.3	1.8
GBW 07240	0.14	0.079	0.29	8.3	.	26.1	10.0	.	.	0.46	0.15	0.23	17.8	0.64	2.5	0.11	8.7	5.0

analysis listed in mg/kg except % which is mass %

Number	Lu	Mo	Nd	Ni	Pb	Pr	Sb	Sc	Se	Sm	Sr	Tb	Te	Th	Tl	Tm	Y	V%	Yb	Zr%
USZ 26-99	.	.	.	35	.	.	(20)	.	.	.	78	.	.	.	.	.	.	0.010	.	0.017
GBW 07241	2.4	.	32.9	2.8	81.2	7.9	3.1	5.4	0.96	12.5	.	3.3	2.9	28.3	1.8	2.2	128	.	14.9	.
GBW 07240	0.06	4.2	4.0	4.1	.	1.1	5.1	1.8	0.39	0.79	.	0.15	0.66	2.2	5.0	0.04	2.8	.	0.28	.

CRM ELEMENTARY TUNGSTEN ORE

Number	WO_3	WO_3 Scheelite	WO_3 Wolframite	Mo	Bi	Bi Oxidize	Bi Native	Bi Sulphides	FeS_2	Units
KZ 274-95	0.16	0.013	0.031	0.0034	0.031	0.016	0.0065	0.0099	6.84	100 g

CRM ULTRABASIC ROCKS

analysis listed in mass % — 150 g units

Number	MgO	SiO_2	Al_2O_3	CO_2	CaO	Cl	CoO	Cr_2O_3	Fe(t)	FeO	Fe_2O_3	H_2O	K_2O	MnO	Na_2O	NiO	P_2O_5
GBW 07101	41.03	34.34	0.67	0.58	0.10	0.57	0.012	1.57	6.90	(2.42)	(4.21)	14.17	0.010	0.068	0.008	0.32	0.004
GBW 07102	38.34	37.75	0.21	1.66	1.80	0.022	0.013	0.42	7.04	(1.97)	(4.85)	12.69	0.009	0.097	0.028	0.30	0.003

analysis listed in mass % / analysis listed in g/ton / analysis listed in mg/kg

Number	S	TiO_2	V_2O_5	Pt	Pd	Rh	Ir	Os	Ru	Ag	As	Au	B	Ba
GBW 07101	0.051	0.008	0.007	0.004	0.005	0.0006	0.003	0.006	0.010	0.031	0.82	0.0014	5.9	6.4
GBW 07102	0.008	0.004	0.003	0.006	0.002	0.0012	0.003	0.006	0.009	0.023	0.43	0.0004	10.2	10.5

continued analysis listed in mg/kg

Number	Br	Cd	Cu	Ce	Dy	Eu	F	Ga	Gd	Ge	Hg	Ho	La	Li	Lu
GBW 07101	(24.7)	(0.024)	5.5	0.34	0.020	0.0043	21.4	1.2	0.024	0.66	0.046	0.0049	0.20	1.3	0.004
GBW 07102	(1.4)	(0.034)	5.3	0.40	0.021	0.0061	35.3	0.38	0.031	0.63	0.015	0.0043	0.21	2.3	0.0022

continued analysis listed in mg/kg

Number	Nd	Pb	Sb	Sc	Sr	Sm	Tb	Tm	Yb	Er	Pr	Zn	Y
GBW 07101	0.16	2.8	(0.12)	4.9	2.3	0.025	0.0029	0.0030	0.020	(0.045)	(0.045)	45.4	(0.14)
GBW 07102	0.18	3.2	(0.050)	4.8	33.2	0.028	0.030	(0.0028)	0.012	(0.012)	(0.047)	43.6	(0.14)

CRM ULTRAMAFIC ROCKS

analysis listed in mass %

Number	Cu	Ni	Co
CAN UM-2	0.095	0.29	0.012
CAN UM-4	0.054	0.19	0.007

These rock samples are intended as reference materials for the determination of ascorbic acid/hydrogen peroxide-soluble Cu, Ni, and Co.

informational analysis — 100 g units

Number	Al_2O_3	CaO	CO_2	Cr_2O_3	T.FeO	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	ZnO
CAN UM-2	7.23	4.68	0.1	1.51	12.95	6.27	0.11	25.45	0.08	0.32	0.012	0.94	39.2	0.24	0.004
CAN UM-4	8.98	6.27	0.26	2.59	12.8	4.86	0.18	22.5	0.15	0.45	0.007	0.44	39.35	0.35	0.008

CRM URTITE

analysis listed in mass % — 40 g units

Number	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	FeO	P_2O_5	Ba	Sr
VS 2123-81	42.80	1.79	26.47	2.67	0.084	0.14	3.73	13.33	5.16	1.40	0.388	0.035	0.100

continued analysis listed in mg/kg

Number	Be	Co	Cr	Cu	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sn	V	Y	Yb	Zn	Zr
VS 2123-81	5.1	8.1	9.7	24	48	100	8.9	2.3	97	6.5	5.8	79	3.4	86	26	1.7	44	220

CRM WOLLASTONITE

analysis listed in mass % — 50 g units

Number	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI
GBW 03123	0.39	40.39	0.28	0.10	0.14	0.95	0.096	0.052	0.052	(0.010)	50.50	0.022	6.93

CRM ZEOLITE (SPIKED)

analysis listed in mass % T = Total 70 g units

Number	Al_2O_3	Ba	CaO	T.Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	Rb	SiO_2	Sr	TiO_2	Zr	LOI
USZ 49-2009	12.98	0.0371	1.34	1.27	3.19	0.573	0.033	3.44	0.032	0.0106	67.44	0.0635	0.158	0.0177	8.80

continued analysis listed in mg/kg

Number	As	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Hg	Ho
USZ 49-2009	60.5	(2.75)	(11.7)	(7.85)	74.8	20.3	12.7	4.73	79.3	(3.46)	(1.83)	(0.50)	13.8	(3.81)	(5.38)	(1.85)	(0.66)

Number	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Sb	Sc	Sm	Sn	Ta	Tb	Th	Tm
USZ 49-2009	37.2	(6.07)	(0.27)	(0.43)	14.1	27.3	14.6	84.2	(7.97)	(50.9)	3.27	(4.82)	(2.27)	(1.16)	(5.9)	17.2	(0.27)

Number	U	V	W	Y	Yb	Zn
USZ 49-2009	3.09	42.3	(1.52)	18.6	(1.81)	79.3

CRM ZINC ORE

analysis listed in mass % except * which is mg/kg T = Total

Number	Zn	S	Al_2O_3	Ca	CaO	Cd	Cu	Fe	Hg*	Mg	MgO	Ni	Pb	Sb	SiO_2
KZ 187-89	60.8	33.1T	.	.	.	0.25	.	5.12T	303.9	.	0.56	.	.	.	.
IMN TC/P10	60.6	3.07	0.14	.	2.54	.	.	6.7	.	.	1.38	.	2.31	.	0.56
IMN KC8	59.52	29.58	0.030	.	2.37	0.40	.	0.88	.	.	1.21	.	2.20	.	0.14
SRM 113b	56.49	30.032	.	0.8196	.	0.7804	0.2953	2.077	(0.55)	0.4460	.	.	2.731	.	.
CAN CZN-4	55.24	33.07	Al:0.0715	(0.0419)	.	0.2604	0.403	(9)	4.54	(0.0352)	.	(0.0016)	0.1861	(0.0010)	Si:0.295
IMN KC10	54.49	28.23	0.05	.	4.35	0.40	.	1.47	.	.	2.54	.	2.59	.	0.24
IMN TC 9	53.4	0.52	.	.	6.96	0.0049	.	5.64	.	.	3.50	.	3.77	.	5.47
CAN CZN-3	50.92	31.6	.	0.058	.	0.248	0.009	9.97	(5)	.	.	.	0.113	(0.001)	.
GBM903-12	48.9451	.	.	.	.	.	0.5991	.	.	.	.	0.0201	1.0989	.	.
GBM305-12	17.0581	.	.	.	.	.	0.0119	.	.	.	.	0.0042	0.4214	.	.
GBM907-13	6.6270	5.85	.	.	.	.	1.6853	.	.	.	.	0.0073	0.4102	.	.
GBM906-11	6.3072	.	.	.	.	.	0.0369	.	.	.	.	.	0.1554	.	.
IMN RG 8	5.4	0.57	0.9	.	26.45	0.047	.	6.34	.	.	12.16	.	0.84	.	2.64
GBM906-12	5.2675	.	.	.	.	.	0.1399	.	.	.	.	.	0.1346	.	.
GBM308-12	4.9142	15.00	.	.	.	.	0.5163	.	.	.	.	0.0029	2.1453	.	.
GBM907-14	3.1882	2.90	.	.	.	.	0.8167	.	.	.	.	0.0061	0.1973	.	.
IMN RB 7	3.07	(10.3)	.	.	24.35	0.033	.	8.28	.	.	15.26	.	(0.26)	.	(0.8)
GBM908-12	2.5161	7.77	.	.	.	.	0.2625	.	.	.	.	.	1.0924	.	.
GBM307-14	1.7179	23.59	.	.	.	.	0.7502	.	.	.	.	0.0054	0.0217	.	.
GBM906-14	1.5949	.	.	.	.	.	1.1758	.	.	.	.	.	0.0405	.	.
BCR 109	.	.	.	.	.	0.46	0.946	14.51	0.96	0.020	.	.	0.738	.	.
BCR 110	.	.	.	.	.	1.051	1.628	0.55	1.484	0.136	.	.	9.78	.	.

continued

Number	Ag*	As	Au*	Bi*	C	Cl	Co	F	Ga*	In	Mn	PbO	Se*	Sn	ZnO	Units
KZ 187-89	21.7	.	.	.	.	.	.	.	11.7	.	.	.	.	.	.	100 g
IMN TC/P10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	240 g
IMN KC8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
SRM 113b	460.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
CAN CZN-4	51.4	0.0356	(0.04)	(10)	(0.09)	(0.003)	0.00935	(0.004)	.	(0.020)	(0.009)	.	86.7	(0.05)	.	200 g
IMN KC10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
IMN TC 9	.	.	.	.	.	0.033	.	0.055	.	.	.	.	.	.	.	220 g
IMN KC11	.	0.042	.	.	.	.	1.8	.	.	.	.	.	.	.	.	280 g
CAN CZN-3	45	0.039	.	.	.	.	0.685	.	.	.	(0.0096)	.	.	.	.	200 g
GBM903-12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM305-12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM907-13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM906-11	2.6	.	.	.	.	.	13	.	.	.	.	.	.	.	.	250 g
IMN RG 8	.	.	.	.	.	.	.	.	.	.	.	(0.72)	.	.	(4.36)	130 g
GBM906-12	2.1	.	.	.	.	.	17	.	.	.	.	.	.	.	.	250 g
GBM308-12	43.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM907-14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
IMN RB 7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	170 g
GBM908-12	22.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM307-14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g
GBM906-14	2.9	.	.	.	.	.	31	.	.	.	.	.	.	.	.	250 g
BCR 109	.	.	.	.	.	.	.	0.0081	.	.	.	.	.	.	.	200 g
BCR 110	.	.	.	.	.	.	.	0.0055	.	.	.	.	.	.	.	200 g

CRM ZINC ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % T = Total * Provisional Analysis 100 g units

Number	Zn	Al_2O_3	CaO	T. C	Cu	F	Fe_2O_3	H_2O-	H_2O+	K_2O	MgO	MnO	Na_2O	Pb	S	SiO_2	TiO_2	LOI
GBW 07237	2.75	2.80	1.91	.	0.71	1.20	3.50	.	.	0.99	0.082	0.026	0.56	0.25	2.87	82.95	0.017	.
JZn-1 *	2.22	6.32	18.1	(1.28)	(0.0029)	.	11.8	(0.61)	(1.71)	0.83	1.94	1.49	0.45	0.161	(1.30 T)	(43.95)	0.20	(6.61)

continued analysis listed in mg/kg

Number	Ag	As	Ba	Bi	Cd	Ce	Co	Cr	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li	Lu
GBW 07237	13.5	12.4	.	56.4	29.3	2.3	.	(62)	0.49	0.06	0.28	8.0	0.31	1.4	0.13	0.23	1.3	(86)	0.08
JZn-1 *	.	(99)	(208)	.	(114)	.	(24)	(21)	.	.	.	.	.	.	.	.	.	(19.5)	.

Number	Mo	Nd	Ni	Pr	Rb	Sb	Sc	Se	Sm	Sn	Sr	Tb	Te	Th	Tl	Tm	V	W	Y	Yb
GBW 07237	2.8	0.92	5.5	0.30	(73)	1.1	0.33	2.3	0.36	6.1	.	0.10	0.17	(1.1)	0.49	0.05	.	3.4	4.5	0.42
JZn-1 *	.		(6)	.	(42)	(31)	.	.	.	.	(358)	.	.	.	.	.	(24)	.	.	.

CRM ZIRCONIUM ORE

analysis listed in mass %

Number	ZrO_2	Al_2O_3	CaO	F	FeO	Fe_2O_3(T)	H_2O+	HfO_2	K_2O	MgO	MnO	Na_2O	P_2O_5	RE_xO_y*	SiO_2	TiO_2	LOI
NCS DC86316	4.68	(14.57)	0.63	0.027(F-)	0.10	0.38	0.49	0.084	3.90	0.079	0.021	4.20	0.040	0.0515	70.73	0.64	0.56
NCS DC86308	1.25	14.70	2.64	0.082	1.82	4.69	1.29	0.025	3.31	2.01	0.083	3.74	0.167	0.022	65.66	0.410	1.51
NCS DC86307	0.187	14.74	2.70	0.080	1.83	4.80	1.35	0.00421	3.37	2.10	0.085	3.83	0.163	0.018	66.02	0.420	1.55

* RE_xO_y: Rare Earth Oxide

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nd_2O_3	Pr_6O_{11}	Sc_2O_3	Sm_2O_3	Tb_4O_7	Th	Tm_2O_3	W	Y_2O_3	Yb_2O_3	Units
NCS DC86316	146	14.9	16.4	0.55	9.92	3.66	69.2	6.11	53.4	15.7	10.7	10.1	2.02	202	2.84	5.01	142	25.9	100 g
NCS DC86308	74.4	4.6	4.6	1.2	(4.1)	1.3	37.9	1.5	26.9	7.8	14.8	4.9	0.74	15.2	0.92	.	41.9	7.8	70 g
NCS DC86307	70.7	2.8	1.8	1.2	3.4	0.59	36.6	0.38	27.5	7.7	14.1	4.7	0.53	7.8	0.31	.	19.5	2.2	70 g

ZIRCONIUM MATERIALS

CERAM: 25 or 100 g units IGS: 50 g units all others: 100 g units

Number	ZrO_2	HfO_2	ZrO_2 + HfO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Other
CRM														
BCS 358	92.70	1.63	.	0.08	1.50	0.064	.	3.42	.	.	0.20	0.20	0.08	BaO: 0.10 SrO: 0.07
VS K7/3	92.2	.	65.9	(0.1)	5.39	0.73	.	.	.	.	0.65	.	.	
VS K8/2	65.9	.	.	1.16	.	0.081	.	.	.	0.110	32.3	0.163	.	S: 0.0064
IGS 35	65.86	1.368	.	.	.	.	.	.	.	.	.	0.27	.	
ASCRM 008	.	.	66.62	0.103	0.012	0.063	.	0.004	.	0.090	32.66	0.097	.	
BCS 388	64.9	1.30	66.2	0.291	.	0.049	.	.	.	0.12	32.7	0.232	.	ThO_2: 0.018 U_3O_8: 0.034 Y_2O_3: 0.136
SARM 13	64.01	1.29	.	0.61	(0.14)	0.187	.	(0.0440)	.	0.23	32.56	0.295	.	Th:(0.0300) U:(0.0328)
RM														
CERAM 2CAS15	.	.	64.6	0.36	0.52	0.08	0.02	0.11	0.03	.	34.1	0.18	.	
BCS 204A	.	.	53.8	0.74	0.15	0.18	0.017	0.012	0.014	0.77	37.6	2.22	0.50	SnO_2: 1.69
CERAM AN46	.	.	15.7	30.5	0.21	0.85	1.01	5.36	0.15	.	45.5	0.50	.	

METHOD SPECIFIC REFERENCE MATERIALS

RM AQUA REGIA METHOD - ISO 11466 and USEPA 3052

typical analysis listed in mass % except * which is mg/kg ** indicates USEPA method powder 50 g

Number	Comment	pH	Tot.Res.	Al	Ba	Ca	Fe	K	Mg	Mn	N*	(TKN) Kjeldahl N	NH_3	Tot.P	Zn
RT 016 AR	Sediment	7.85	.	.	.	.	.	.	.	.	.	.	.	.	0.00800
RT 055 AR	Sewage Sludge	7.61	(92.1)	1.3200	0.0347	4.80**	2.25	.	.	0.0232	.	4.11	(0.242)	2.31	0.0563
RT 015 AR	Sediment	7.53	.	(2.1900)	(0.0128)	2.44	20.8	(0.43)	(1.43)	0.0207	0.75	.	.	0.730*	0.00788
RT 044 AR	Soil - Loam	8.09	.	.	.	.	.	.	.	0.0204	.	.	.	.	0.0136
RT 052	Soil - Loamy Clay	6.54	.	1.0900	0.0137	.	1.24	.	.	0.0187	.	0.0627	.	0.0348	0.0089
RT 045	Soil - Silty Clay	6.15	.	.	.	.	.	.	.	0.0292	.	.	.	.	0.0330
RT 046	Soil - Clay	5.39	.	.	.	.	.	.	.	0.0118	.	.	.	.	0.0114
RT 026 AR	Soil - Sandy Loam	4.29	.	.	.	.	.	.	.	.	.	.	.	.	0.0169

continued analysis listed in mg/kg ** indicates USEPA method

Number	Oxygen Demand	Ag	As	Be	CN	Cd	Co	Cr	Cu	Hg	Mo	Na	Ni	Pb	Sb	Se	Sn	V
RT 016 AR	.	.	7.76	.	.	0.613	.	29.2	17.4	0.158	.	.	21.2	18.6	.	.	.	.
RT 055 AR	771	18	3.3	(1.17)	.	1.74	2.97	40.4	402	(1.71)	10.4	(0.0715)**	19.2	25.4	3.33	(6.21)	.	12
RT 015 AR	.	.	7.74	.	6.74	(0.29)	(7.04)	(36.1)	17.0	(0.11)	.	.	20.2	(15.2)	.	.	.	.
RT 044 AR	.	.	52.3	.	.	71.6	50.6	88.5	64.0	9.70	.	.	87.1	77.8	.	.	.	.
RT 052	10.7	2.35	14.6	(26.1)	.	35.6	26.3	30.7	44.2	0.815	38.9	.	28.6	82.6	20.1	8.24	2.48	88.4
RT 045	.	.	18.4**	.	.	1.61	13.5	85.3	122	0.795	.	.	199	42.8	.	.	.	.
RT 046	.	.	7.47**	.	.	7.01	8.22	45.7	62.2	0.153**	.	.	37.5	45.3	.	.	.	.
RT 026 AR	.	.	5.41	.	.	12.9	.	36.9	22.5	0.242	.	.	19.3	30.7	.	.	.	.

RM CALIFORNIA WET and TCLP - USEPA SW843 3rd Ed. METHOD 1311

typical analysis listed in mg/L powder 225 g

Number	Comment	pH	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
RT 222	Sandy Loam	6.86	0.046	2.50	0.778	3.66	0.261	0.060	0.339	3.39
RT 211	Sandy Loam	6.78	0.013	0.749	0.352	3.53	1.06	0.012	1.48	1.35
RT 206	Sandy Loam	6.72	1.04	14.0	0.38	8.34	0.130	0.65	2.16	20.6
RT 214	Sandy Loam	6.70	0.240	2.92	7.51	0.410	3.20	0.060	0.320	5.48
RT 216	Sandy Loam	6.69	0.042	5.45	0.653	2.39	0.370	0.050	0.624	4.28
RT 215	Sandy Loam	6.58	<0.02	5.76	17.4	54.1	2.09	1.78	1.93	1.87
RT 209	Sandy Loam	6.36	<0.100	4.96	0.23	5.65	1.06	<0.01	61.4	<0.100
RT 217	Sandy Loam	6.26	0.037	1.84	3.43	8.85	0.467	1.98	1.75	8.63
RT 202	Sandy Loam	6.22	5.01	1.44	5.85	19.6	11.1	5.58	48.5	1.38
RT 208	Sandy Loam	5.76	<0.100	3.93	32.8	46.7	0.87	0.620	2.14	<0.100
RT 210	Sandy Loam	4.93	0.120	1.98	0.500	6.50	0.460	0.450	133	.
RT 204	Sandy Loam	2.60	(0.028)	0.506	(0.016)	14.8	3.31	(0.007)	4.51	(0.341)
RT 212	Loamy Sand	6.75	(0.02)	(0.09)	0.67	0.35	(0.03)	0.007	(0.06)	0.33
RT 207	Loamy Sand	6.45	0.990	9.51	0.400	7.45	1.36	0.020	2.76	20.8
RT 213	Loamy Sand	6.34	(0.03)	4.10	2.37	12.0	0.550	0.440	4.90	7.15
RT 221	Clay Loam	6.61	0.0227	6.87	0.571	5.66	0.465	0.109	1.55	3.85
RT 205	Incenerator Ash	5.97	<0.1	42.5	0.339	149	3.97	<0.01	45.3	<0.1

CRM SEQUENTIAL EXTRACTION

Part Number: BCR 701, 20 g units

	Cd	Cr	Cu	Ni	Pb	Zn
Step 1	7.34	2.26	49.3	15.4	3.18	205
Step 2	3.77	45.7	124	26.6	126	114
Step 3	0.27	143	55.2	15.3	9.3	45.7
Concentration	(0.13)	(62.5)	(38.5)	(41.4)	(11.0)	(95)