Quality Analysis ... *Innovative Technologies*

Date Submitted: 05-Jun-13
Invoice No.: A13-06240
Invoice Date: 24-Jun-13
Your Reference: Project 391

MINNESOTA DEPT OF NAT RESOURCES
500 LAFAYETTE RD BOX 45,
ST PAUL MN 55155-4045 United States

ATTN: Barry Frey

CERTIFICATE OF ANALYSIS

65 Rock samples were submitted for analysis.

The following analytical packages were requested:

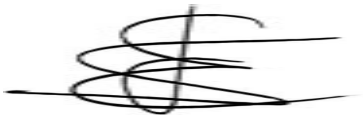
REPORT **A13-06240**

Code 1C-Exp Fire Assay-ICP/MS
Code 4F-B(2ppm) PGNAA
Code 4F-C, S Infrared
Code 4F-CO2 Infrared
Code 4F-FeO Titration
Code 4F-H2O+- Gravimetric
Code 4LITHORES (FeO) (11+) Major Elements Fusion ICP(WRA)/Trace Elements Fusion ICP/MS(WRA4B2)

Notes:

The Fe2O3 for the standards is Total Fe2O3 and has not been adjusted for the FeO with the exception of SY-3, BIR-1 and GBW 07113. LOI2 is the LOI adjusted for the difference in oxygen between FeO and Fe2O3. TOTAL2 is the total including LOI2.
Values which exceed Upper limit should be assayed for most accurate values.
We recommend reanalysis by fire assay Au, Pt, Pd Code 8 if values exceed upper limit.
We recommend using option 4B1 for accurate levels of the base metals Cu, Pb, Zn, Ni and Ag.
Option 4B-INAA for As, Sb, high W >100ppm, Cr >1000ppm and Sn >50ppm by Code 5D.
Values for these elements provided by Fusion ICP/MS, are order of magnitude only and are provided for general information. Mineralized samples should have the Quant option selected or request assays for values which exceed the range of option 4B1. Total includes all elements in % oxide to the left of total.

CERTIFIED BY :



Emmanuel Eseme , Ph.D.
Quality Control

ISO/IEC 17025
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Activation Laboratories Ltd. Report: A13-06240 rev 1

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
P391001	< 1	< 1	< 2	2.16	0.12	7.49	7.0	0.3	43.53	13.97	2.91	0.332	3.19	15.59	1.62	0.21	0.773	0.07	10.75	9.96	100.7	99.94	37	< 1
P391002	< 1	< 1	< 2	0.53	0.04	2.42	5.9	0.3	49.44	15.61	4.01	0.243	3.50	11.70	2.15	0.18	0.911	0.07	5.04	4.38	99.41	98.75	43	< 1
P391003	< 1	< 1	6	2.07	0.04	7.35	6.0	0.5	43.66	13.98	3.32	0.274	4.14	14.51	2.11	0.49	0.786	0.05	10.90	10.23	100.9	100.2	37	< 1
P391004	< 1	1	< 2	1.14	< 0.01	4.02	6.0	0.6	49.90	11.70	1.94	0.178	9.21	8.80	1.69	1.37	0.635	0.46	8.10	7.43	100.7	99.99	20	2
P391005	< 1	< 1	< 2	1.83	0.03	6.36	6.0	0.6	45.70	13.96	3.66	0.231	2.75	12.48	1.29	1.82	0.779	0.08	9.94	9.27	99.36	98.69	37	< 1
P391006	< 1	< 1	< 2	1.36	0.06	5.10	5.9	0.4	52.64	13.67	2.64	0.226	2.71	10.87	2.13	0.56	0.771	0.06	8.00	7.34	100.8	100.2	36	< 1
P391007	1	1	< 2	0.90	0.03	3.27	7.0	0.3	47.35	11.77	2.01	0.194	10.74	10.85	1.93	0.53	0.587	0.11	6.47	5.69	100.3	99.55	27	< 1
P391008	< 1	< 1	4	0.90	1.03	0.11	3.6	0.7	64.11	13.46	5.15	0.074	3.36	0.45	0.37	2.92	0.443	0.10	5.83	5.43	100.3	99.86	17	1
P391009	< 1	< 1	7	5.33	1.32	0.21	4.1	0.8	62.52	10.33	3.24	0.049	4.71	0.44	0.28	1.78	0.365	0.11	10.77	10.32	99.16	98.70	16	1
P391010	4	4	3	1.25	0.93	0.11	7.2	0.6	50.19	10.70	6.64	0.122	11.69	0.85	0.05	0.22	0.571	0.13	8.57	7.77	97.73	96.93	33	< 1
P391011	5	6	< 2	0.02	0.02	0.07	12.1	0.3	45.50	8.83	1.45	0.207	18.02	7.37	0.10	0.03	0.777	0.09	4.93	3.58	100.8	99.42	31	< 1
P391012	6	6	2	0.02	0.29	0.11	12.5	0.3	44.01	8.54	1.80	0.200	20.26	5.50	0.10	0.02	0.673	0.06	5.65	4.25	100.7	99.30	27	< 1
P391013	5	5	< 2	2.17	0.63	7.78	6.9	0.3	43.33	12.66	1.64	0.159	6.85	11.26	2.85	1.48	0.656	0.05	11.30	10.53	99.90	99.13	34	< 1
P391014	6	5	< 2	0.87	0.03	2.97	6.5	0.2	47.39	14.30	2.42	0.172	7.07	13.04	2.20	0.41	0.689	0.07	5.52	4.79	100.5	99.78	36	< 1
P391015	6	7	< 2	1.15	0.16	4.09	9.0	0.3	46.68	12.60	1.96	0.170	8.90	7.85	2.25	0.96	1.005	0.07	8.02	7.02	100.5	99.47	33	< 1
P391016	9	8	< 2	0.95	0.22	3.30	10.0	0.2	41.70	6.45	1.43	0.166	21.83	6.14	0.06	< 0.01	0.361	0.04	8.60	7.48	97.91	96.79	23	< 1
P391017	< 1	< 1	< 2	0.43	0.07	1.54	10.4	0.2	51.50	13.03	2.59	0.275	5.62	9.37	1.33	0.15	1.297	0.12	4.12	2.96	101.0	99.81	48	< 1
P391018	12	14	< 2	0.34	0.02	1.17	7.7	0.2	50.34	14.00	2.87	0.206	7.06	11.23	1.93	0.15	0.819	0.08	3.49	2.63	100.7	99.88	46	< 1
P391019	11	13	< 2	0.46	0.09	1.57	8.4	0.2	48.65	13.90	2.95	0.236	7.57	10.17	1.45	0.13	0.739	0.06	4.55	3.61	99.73	98.79	44	< 1
P391020	11	12	< 2	0.94	0.18	3.30	7.7	0.3	48.41	13.12	3.12	0.259	6.88	10.98	1.42	0.07	0.716	0.07	6.72	5.86	100.3	99.47	42	< 1
P391021	9	11	3	0.16	0.01	0.65	8.5	0.6	51.00	14.41	4.60	0.345	7.12	6.82	0.18	0.06	0.754	0.06	5.48	4.53	100.3	99.33	46	< 1
P391022	< 1	1	< 2	0.88	2.55	0.21	4.7	1.4	58.17	14.27	2.40	0.099	4.52	0.55	1.60	1.14	0.757	0.04	9.39	8.87	98.16	97.64	36	< 1
P391023	< 1	1	< 2	0.73	0.71	2.67	9.1	0.8	48.12	15.14	2.64	0.915	6.28	3.50	1.93	0.64	0.840	0.06	7.85	6.83	98.05	97.03	41	< 1
P391024	< 1	< 1	< 2	0.30	0.17	1.02	6.6	0.2	51.36	15.10	1.97	0.219	7.03	7.94	3.12	0.52	0.860	0.06	4.40	3.67	99.93	99.19	43	< 1
P391025	< 1	< 1	< 2	0.18	0.18	0.64	6.3	0.2	49.94	16.79	2.76	0.217	6.42	7.82	3.61	0.20	0.942	0.08	3.81	3.10	99.59	98.88	46	< 1
P391026	< 1	< 1	2	2.63	0.03	9.23	2.9	0.1	54.36	8.22	1.25	0.173	3.06	16.45	1.64	0.14	0.415	0.04	11.22	10.89	100.2	99.86	19	< 1
P391027	2	1	99	0.02	0.06	0.05	0.6	0.1	94.42	1.71	0.15	0.009	0.16	0.11	0.06	0.46	0.101	0.03	0.68	0.61	98.56	98.49	2	< 1
P391028	< 1	< 1	4	0.08	0.02	0.28	1.0	0.1	12.14	0.54	85.48	0.036	0.06	0.04	0.04	0.02	0.094	0.05	0.97	0.86	100.6	100.5	6	< 1
P391029	< 1	< 1	< 2	0.01	0.13	0.09	1.8	0.2	68.03	16.52	0.83	0.038	2.04	1.56	6.35	1.28	0.372	0.14	1.37	1.17	100.5	100.3	5	1
P391030	< 1	< 1	< 2	0.28	0.09	1.00	2.3	0.2	66.57	15.87	0.26	0.043	1.96	3.23	5.75	1.63	0.363	0.14	2.02	1.76	100.4	100.1	5	1
P391031	< 1	< 1	< 2	0.09	0.05	0.43	1.9	0.3	67.22	16.47	0.58	0.025	1.77	1.23	6.39	0.99	0.370	0.14	2.29	2.08	99.58	99.37	5	1
P391032	< 1	< 1	< 2	1.50	0.50	0.12	2.7	2.3	59.77	13.86	7.14	0.032	1.46	0.95	3.12	1.45	0.621	0.14	8.64	8.34	100.2	99.88	16	2
P391033	< 1	< 1	< 2	1.36	0.54	4.80	9.2	0.8	47.98	14.02	1.93	0.344	4.53	7.74	1.18	0.94	1.268	0.16	10.09	9.06	100.4	99.37	34	< 1
P391034	2	2	< 2	2.04	0.45	7.18	9.7	0.3	44.62	12.23	0.91	0.191	6.83	9.99	1.81	0.32	0.920	0.16	11.96	10.87	100.7	99.64	30	< 1
P391035	4	3	< 2	2.47	0.19	8.72	9.5	0.3	34.94	12.85	2.26	0.164	16.06	7.75	0.17	0.05	0.322	0.13	15.12	14.06	100.4	99.31	23	< 1
P391036	8	6	< 2	3.23	0.03	14.5	7.4	0.2	39.67	7.72	0.86	0.170	13.93	9.97	0.61	0.58	0.388	0.09	17.92	17.10	100.1	99.31	27	< 1
P391037	8	8	< 2	3.71	0.12	13.4	7.4	0.2	39.66	9.79	1.08	0.169	10.27	9.28	2.08	0.75	0.439	0.16	16.27	15.45	98.18	97.35	28	< 1
P391038	7	6	< 2	2.71	0.11	16.0	7.3	0.1	35.28	9.47	1.65	0.190	9.62	11.21	2.60	0.78	0.539	0.14	18.36	17.55	97.96	97.15	32	< 1
P391039	6	4	< 2	3.59	1.23	12.7	4.3	0.1	43.32	12.29	2.40	0.158	4.94	10.56	5.78	0.60	0.605	0.28	12.17	11.69	97.88	97.39	23	< 1
P391040	1	2	< 2	1.92	0.40	6.62	8.5	0.1	45.78	12.11	1.58	0.205	5.72	9.77	2.79	0.47	0.808	0.10	9.46	8.51	98.24	97.29	31	< 1
P391041	1	1	< 2	1.51	0.19	5.31	8.6	0.2	45.22	13.30	2.00	0.170	7.25	7.59	2.96	0.99	0.915	0.10	8.67	7.71	98.73	97.77	35	< 1
P391042	1	1	< 2	1.67	1.00	5.89	7.9	0.1	44.97	13.00	1.60	0.192	6.35	8.76	3.81	1.72	0.833	0.10	8.23	7.35	98.35	97.46	33	1
P391043	< 1	< 1	< 2	1.92	0.85	6.70	9.1	0.1	41.84	12.71	1.57	0.248	5.18	12.27	3.81	0.82	0.869	0.09	9.59	8.57	99.11	98.09	34	< 1
P391044	2	4	< 2	3.23	0.62	11.6	5.7	0.1	44.96	8.50	0.80	0.152	10.15	9.41	2.42	1.90	0.496	0.23	13.66	13.02	99.02	98.38	20	1
P391045	3	3	< 2	0.79	0.03	2.55	6.2	0.1	49.57	10.09	1.78	0.141	11.39	7.84	2.68	2.67	0.624	0.29	5.22	4.53	99.19	98.50	25	2
P391046	< 1	2	< 2	1.18	0.11	3.94	7.7	0.1	45.91	13.44	2.37	0.216	5.44	11.74	2.65	1.00	0.801	0.07	5.67	4.80	97.88	97.02	40	< 1
P391047	2	2	< 2	0.56	0.07	3.21	6.8	0.1	42.45	11.45	3.37	0.165	8.14	12.67	2.90	3.31	1.492	1.62	4.60	3.84	99.74	98.98	23	4
P391048	< 1	< 1	< 2	1.18	0.24	3.97	6.5	0.1	41.88	10.97	2.71	0.152	6.81	13.39	3.41	3.29	1.242	2.41	5.53	4.81	99.04	98.31	10	2
P391049	< 1	< 1	< 2	1.62	0.01	5.50	3.0	0.1	45.02	10.66	2.32	0.093	9.46	12.05	2.26	5.96	0.722	0.22	7.09	6.75	99.18	98.84	6	2
P391050	< 1	< 1	< 2	0.62	0.13	2.12	2.0	< 0.1	58.97	16.38	0.57	0.045	1.67	4.30	5.00	7.02	0.592	0.50	2.64	2.41	99.91	99.68	2	2
P391051	< 1	< 1	< 2	0.75	0.11	2.66	2.8	< 0.1	55.76	14.17	1.34	0.075	2.74	7.35	4.38	6.08	0.985	0.75	2.94	2.63	99.69	99.37	6	2
P391052	1	1	2	0.03	0.34	0.06	4.9	0.2	61.78	15.88	1.08	0.058	3.80	1.61	3.30	3.12	0.564	0.24	3.07	2.52	99.95	99.40	15	2

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
P391053	< 1	< 1	4	0.04	0.11	0.20	9.5	0.5	46.12	15.31	2.81	0.185	8.94	7.01	2.05	1.63	1.569	0.14	4.04	2.98	100.4	99.30	33	< 1
P391054	99	202	82	0.04	1.16	0.16	3.5	0.1	80.41	2.83	1.85	0.050	3.62	4.88	0.08	0.06	0.229	0.05	1.68	1.29	99.64	99.25	8	< 1
P391055	3	2	167	0.02	0.09	0.04	0.6	0.2	93.66	2.57	0.24	0.006	0.16	0.10	0.05	0.75	0.152	0.04	1.12	1.05	99.52	99.45	3	< 1
P391056	< 1	< 1	< 2	0.04	0.14	0.27	9.1	0.4	46.14	15.38	3.05	0.200	7.18	8.65	1.99	1.21	1.808	0.17	3.11	2.10	99.02	98.00	33	< 1
P391057	< 1	< 1	< 2	0.74	0.28	2.18	6.2	0.2	62.03	13.48	1.43	0.122	2.66	3.89	1.68	2.40	0.428	0.13	4.96	4.26	100.1	99.40	14	1
P391058	1	< 1	< 2	2.18	1.91	2.03	3.4	0.2	63.31	14.26	< 0.01	0.068	1.89	3.13	2.79	3.16	0.370	0.15	6.63	6.25	99.30	98.92	12	1
P391059	< 1	< 1	< 2	2.02	1.35	9.48	4.6	0.2	48.44	11.01	0.62	0.208	3.06	12.07	2.49	2.94	0.287	0.10	12.55	12.04	98.90	98.38	7	1
P391060	< 1	< 1	< 2	1.43	0.61	2.81	1.1	0.2	68.81	13.14	0.34	0.071	1.03	4.26	2.20	3.08	0.321	0.14	5.82	5.69	100.4	100.3	5	1
P391061	< 1	1	< 2	1.56	1.40	3.99	5.3	0.2	51.06	12.18	1.28	0.141	9.38	5.84	2.31	0.90	0.583	0.25	9.44	8.85	99.27	98.68	21	2
P391062	1	1	2	2.64	1.93	1.52	4.0	0.2	62.94	14.87	< 0.01	0.041	1.47	2.26	2.81	3.31	0.422	0.15	6.56	6.11	99.02	98.57	14	1
P391063	2	2	< 2	0.64	0.38	2.25	5.3	0.1	56.39	14.63	0.98	0.108	5.69	5.28	4.69	1.32	0.610	0.23	4.93	4.34	100.7	100.1	19	2
P391064	3	3	< 2	2.37	0.23	8.62	6.8	0.5	40.97	10.05	1.50	0.276	10.70	12.12	0.82	0.71	0.619	0.21	13.80	13.03	99.34	98.58	23	2
P391065	4	4	< 2	1.25	0.76	4.35	8.3	0.3	46.43	12.64	0.47	0.145	8.69	7.79	2.78	1.06	0.748	0.25	8.65	7.72	98.88	97.95	27	2

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
P391001	256	180	46	140	120	60	14	1.4	< 5	5	112	16.2	42	1.4	< 2	0.7	< 0.1	< 1	< 0.2	0.1	78	3.13	7.37	1.11
P391002	285	210	52	170	110	70	17	1.8	< 5	4	122	18.3	50	1.5	< 2	0.6	< 0.1	< 1	< 0.2	< 0.1	51	3.53	8.25	1.27
P391003	253	190	48	160	110	70	16	1.8	< 5	11	98	16.1	44	1.5	< 2	0.5	< 0.1	< 1	< 0.2	0.8	55	3.62	8.08	1.21
P391004	152	700	37	240	40	80	14	1.3	< 5	46	93	13.7	92	3.0	< 2	0.8	< 0.1	< 1	< 0.2	2.0	333	14.3	31.5	4.29
P391005	250	190	46	140	120	140	15	2.2	< 5	61	155	15.3	45	1.3	< 2	0.6	< 0.1	< 1	< 0.2	2.4	588	3.53	7.82	1.23
P391006	250	180	42	140	100	70	15	1.5	6	17	117	15.0	44	1.3	< 2	0.6	< 0.1	< 1	< 0.2	0.9	190	2.94	6.53	1.04
P391007	191	750	51	420	40	70	14	2.1	13	15	167	12.4	60	1.9	< 2	0.7	< 0.1	< 1	< 0.2	0.3	175	12.7	27.0	3.51
P391008	113	200	28	160	240	990	17	1.6	14	67	26	11.2	91	2.1	< 2	0.9	< 0.1	2	< 0.2	2.4	724	10.3	19.6	2.42
P391009	108	340	49	170	300	1250	17	1.2	19	49	22	12.1	75	2.6	9	< 0.5	0.2	9	0.3	1.9	538	14.7	31.2	3.81
P391010	197	1360	73	400	270	1910	18	2.8	20	7	6	17.2	55	1.8	< 2	0.7	< 0.1	3	< 0.2	1.3	65	10.7	21.9	2.92
P391011	220	1510	87	650	50	210	12	2.3	< 5	< 1	9	14.3	46	1.6	< 2	0.5	< 0.1	< 1	< 0.2	0.3	9	2.80	6.84	1.09
P391012	201	2170	113	880	160	130	12	2.6	< 5	< 1	7	12.3	41	1.1	< 2	0.6	< 0.1	< 1	< 0.2	0.2	< 3	2.00	5.22	0.83
P391013	214	400	42	160	70	60	15	1.3	< 5	38	144	14.1	42	1.2	< 2	< 0.5	< 0.1	< 1	< 0.2	3.7	502	2.16	5.37	0.86
P391014	224	300	44	140	80	60	15	1.8	< 5	8	219	13.9	41	0.7	< 2	< 0.5	< 0.1	< 1	< 0.2	0.1	148	2.43	6.19	1.00
P391015	278	320	49	170	90	130	16	1.6	< 5	21	61	19.8	59	1.9	< 2	0.6	< 0.1	< 1	< 0.2	1.6	456	3.25	8.35	1.40
P391016	145	2110	101	860	60	110	8	2.2	< 5	< 1	15	7.5	20	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	0.2	< 3	0.98	2.41	0.38
P391017	401	< 20	55	40	150	110	19	2.2	< 5	2	102	21.8	74	2.2	< 2	0.8	< 0.1	< 1	< 0.2	0.1	43	3.83	9.92	1.60
P391018	295	220	44	80	90	60	15	2.2	< 5	3	164	17.3	49	0.9	< 2	0.6	< 0.1	< 1	< 0.2	< 0.1	39	2.33	6.23	1.07
P391019	275	460	47	100	80	50	15	2.2	< 5	4	79	16.8	42	0.7	< 2	0.5	< 0.1	< 1	< 0.2	< 0.1	20	2.42	6.22	1.01
P391020	267	480	49	120	110	60	15	2.1	< 5	1	97	16.4	42	0.6	< 2	< 0.5	< 0.1	< 1	< 0.2	< 0.1	12	2.57	6.34	1.07
P391021	289	560	59	160	90	570	15	2.3	13	1	79	18.5	41	0.7	< 2	< 0.5	< 0.1	< 1	< 0.2	0.2	46	2.96	6.90	1.05
P391022	235	250	62	150	160	1180	17	1.0	< 5	34	30	23.7	62	1.0	< 2	0.6	< 0.1	1	< 0.2	1.0	201	11.0	21.5	2.88
P391023	283	290	81	310	130	2140	17	2.4	40	20	99	19.7	47	0.6	< 2	< 0.5	< 0.1	< 1	< 0.2	1.1	107	4.08	9.67	1.45
P391024	291	290	60	220	130	150	16	2.2	46	13	106	16.5	47	0.5	< 2	< 0.5	< 0.1	< 1	< 0.2	0.2	63	2.43	6.30	1.04
P391025	292	310	56	180	200	110	18	1.8	11	4	124	20.1	50	0.9	< 2	< 0.5	< 0.1	< 1	< 0.2	< 0.1	66	2.89	7.41	1.25
P391026	137	150	20	60	50	40	10	1.2	5	3	77	9.1	20	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	< 0.1	20	1.34	3.29	0.52
P391027	23	< 20	1	< 20	< 10	< 30	3	1.0	29	16	21	4.1	89	< 0.2	< 2	0.9	< 0.1	< 1	1.4	1.3	223	10.4	17.9	1.86
P391028	78	40	13	< 20	30	< 30	9	4.8	8	< 1	9	3.3	24	0.5	10	< 0.5	< 0.1	9	13.8	< 0.1	121	2.81	4.11	0.62
P391029	50	60	10	40	30	90	19	0.7	< 5	27	433	5.8	99	< 0.2	< 2	0.9	< 0.1	< 1	0.3	1.5	604	15.4	33.2	4.36
P391030	47	50	9	50	< 10	40	22	1.3	< 5	35	485	5.5	108	1.4	< 2	0.9	< 0.1	< 1	< 0.2	2.2	704	17.3	36.2	4.79
P391031	47	50	14	50	30	190	21	0.9	< 5	19	332	7.5	102	1.3	< 2	0.9	< 0.1	< 1	< 0.2	0.6	566	14.6	31.6	4.06
P391032	128	70	35	80	420	1720	22	1.3	< 5	32	180	14.3	100	1.9	< 2	1.0	< 0.1	6	< 0.2	10.3	404	8.84	19.2	2.53
P391033	297	40	65	70	120	830	21	2.4	13	25	136	17.6	97	3.8	< 2	0.9	< 0.1	1	< 0.2	0.7	353	11.0	23.8	3.23
P391034	248	600	55	210	100	220	17	1.9	43	10	192	14.5	75	2.4	< 2	0.7	< 0.1	< 1	< 0.2	1.7	120	8.86	19.3	2.61
P391035	186	2280	93	960	20	120	18	2.2	< 5	2	116	6.0	32	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	0.9	20	6.16	12.3	1.51
P391036	175	1550	56	520	30	80	10	2.2	< 5	19	195	6.8	31	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	4.4	101	6.40	13.8	1.86
P391037	161	980	49	320	60	70	11	1.9	< 5	25	293	10.0	37	0.9	< 2	< 0.5	< 0.1	< 1	< 0.2	4.7	219	9.85	22.3	3.06
P391038	198	800	45	200	70	70	11	1.5	< 5	27	337	11.2	33	0.8	< 2	< 0.5	< 0.1	< 1	< 0.2	5.0	197	8.09	20.1	3.03
P391039	124	330	34	90	90	40	12	1.1	< 5	15	425	12.0	41	1.1	< 2	< 0.5	< 0.1	< 1	< 0.2	0.8	209	7.57	17.6	2.66
P391040	231	240	40	100	80	80	15	1.8	< 5	18	252	15.9	56	1.1	< 2	0.5	< 0.1	< 1	< 0.2	4.1	135	4.77	11.3	1.66
P391041	257	250	44	110	70	80	16	1.8	< 5	41	224	16.7	63	1.4	< 2	0.9	< 0.1	< 1	< 0.2	9.6	188	6.34	14.4	2.05
P391042	234	230	40	100	80	80	16	1.8	< 5	70	246	16.0	59	1.0	< 2	0.7	< 0.1	< 1	< 0.2	14.4	299	5.12	11.7	1.70
P391043	250	230	39	80	90	80	17	1.7	< 5	30	158	16.8	61	1.1	< 2	0.8	< 0.1	< 1	< 0.2	5.1	180	4.88	11.4	1.71
P391044	156	810	39	220	20	90	13	1.5	< 5	85	549	9.2	60	0.3	< 2	0.9	< 0.1	< 1	< 0.2	10.5	1025	10.7	21.7	2.90
P391045	171	740	45	160	110	60	14	1.4	< 5	119	323	10.6	68	0.6	< 2	0.8	< 0.1	< 1	< 0.2	12.5	587	11.8	25.6	3.39
P391046	273	220	47	150	90	90	16	1.8	< 5	43	336	17.1	52	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	4.7	264	4.29	9.62	1.41
P391047	228	30	40	60	70	140	21	1.9	< 5	139	1400	41.5	195	12.8	< 2	1.7	< 0.1	< 1	< 0.2	7.1	1580	179	425	58.8
P391048	144	< 20	32	40	30	130	17	1.6	< 5	137	1723	32.5	156	12.0	< 2	2.0	< 0.1	< 1	< 0.2	5.7	1472	167	371	47.3
P391049	62	< 20	15	< 20	< 10	120	19	1.2	< 5	218	1203	23.9	127	19.8	< 2	1.7	< 0.1	< 1	< 0.2	8.2	1099	79.1	168	21.7
P391050	33	< 20	8	< 20	10	40	18	0.9	< 5	148	2053	15.7	118	16.8	< 2	1.7	< 0.1	< 1	< 0.2	3.6	2586	54.2	128	17.2
P391051	68	30	11	30	20	50	17	1.2	< 5	127	2052	25.6	150	24.5	< 2	1.9	< 0.1	< 1	< 0.2	2.7	2297	79.4	202	28.1
P391052	119	140	22	70	60	60	22	1.5	< 5	95	381	14.8	115	5.2	< 2	1.5	< 0.1	< 1	0.4	3.0	703	38.2	76.5	9.11

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
P391053	277	160	56	90	50	70	17	1.6	< 5	57	334	16.1	66	11.8	< 2	1.0	< 0.1	< 1	< 0.2	4.1	365	12.8	27.4	3.58
P391054	62	270	61	590	1220	30	4	1.1	< 5	1	21	5.4	28	< 0.2	< 2	3.4	< 0.1	< 1	0.4	0.2	46	4.57	9.11	1.14
P391055	32	30	< 1	< 20	< 10	< 30	4	1.1	40	26	30	6.1	113	0.7	3	2.1	< 0.1	< 1	2.4	2.1	361	15.5	27.8	2.94
P391056	302	140	58	90	50	90	18	2.0	< 5	53	315	19.6	77	14.8	< 2	1.4	< 0.1	< 1	< 0.2	6.1	330	15.1	31.1	4.03
P391057	107	130	20	60	60	50	18	2.5	43	80	208	8.9	75	1.3	< 2	1.1	< 0.1	1	< 0.2	2.4	393	14.0	28.5	3.41
P391058	65	50	22	50	160	670	19	0.8	52	95	181	11.9	108	2.4	2	1.6	< 0.1	1	0.2	2.9	609	26.9	54.0	6.44
P391059	46	30	13	50	80	300	15	0.7	9	80	222	11.2	92	1.8	< 2	1.4	< 0.1	< 1	0.6	2.0	533	27.6	52.1	5.83
P391060	40	< 20	9	20	40	230	17	0.9	< 5	86	214	8.0	116	2.1	< 2	1.3	< 0.1	< 1	< 0.2	1.0	701	25.2	49.8	5.69
P391061	143	690	37	170	50	100	18	2.3	< 5	27	224	12.7	105	2.2	< 2	1.4	< 0.1	< 1	< 0.2	2.6	161	39.4	79.8	10.1
P391062	74	60	23	60	110	590	19	< 0.5	< 5	90	241	12.5	110	2.5	2	1.7	< 0.1	1	< 0.2	1.7	582	25.2	50.0	5.93
P391063	144	400	30	80	80	60	16	1.2	< 5	36	643	12.6	99	1.9	< 2	1.4	< 0.1	< 1	< 0.2	1.8	438	22.8	47.4	5.90
P391064	170	1250	55	320	30	80	16	1.4	75	20	136	15.7	61	0.7	< 2	1.0	< 0.1	< 1	< 0.2	3.2	167	22.1	43.8	5.39
P391065	214	740	42	130	130	90	17	1.1	6	30	345	15.0	79	2.4	< 2	1.2	< 0.1	< 1	< 0.2	3.0	350	12.9	27.9	3.72

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
P391001	5.86	1.75	0.669	2.38	0.45	2.90	0.61	1.86	0.285	1.85	0.289	1.0	< 0.01	1.0	0.06	< 5	< 0.1	0.35	0.07	3	1.06	2.5
P391002	6.32	1.95	0.754	2.61	0.50	3.26	0.69	2.06	0.315	2.07	0.330	1.2	< 0.01	1.0	< 0.05	< 5	< 0.1	0.40	0.07	5	1.07	2.0
P391003	6.08	1.87	0.645	2.46	0.45	2.93	0.62	1.85	0.297	1.96	0.290	1.0	< 0.01	1.0	< 0.05	< 5	< 0.1	0.35	0.08	8	1.01	2.7
P391004	19.1	4.30	1.07	3.65	0.53	2.90	0.53	1.41	0.194	1.23	0.195	2.1	0.08	0.8	0.24	< 5	< 0.1	3.46	1.03	7	1.06	3.2
P391005	6.10	1.78	0.648	2.43	0.44	2.74	0.58	1.75	0.276	1.86	0.278	1.1	< 0.01	< 0.5	0.40	< 5	< 0.1	0.39	0.12	16	1.06	2.5
P391006	5.05	1.66	0.615	2.30	0.42	2.66	0.56	1.69	0.248	1.62	0.263	1.0	< 0.01	0.8	0.14	< 5	< 0.1	0.36	0.08	7	1.03	2.2
P391007	14.8	3.00	0.757	2.53	0.41	2.36	0.45	1.32	0.191	1.28	0.211	1.3	< 0.01	0.8	0.07	< 5	< 0.1	1.66	0.37	10	1.06	2.8
P391008	9.25	1.86	0.761	1.91	0.34	2.14	0.44	1.29	0.206	1.41	0.225	2.0	< 0.01	2.0	0.71	14	< 0.1	2.14	0.49	24	1.01	3.2
P391009	15.3	3.07	1.47	2.68	0.38	2.23	0.47	1.51	0.242	1.67	0.283	1.4	0.30	2.4	0.49	44	3.5	2.55	0.75	11	1.02	2.7
P391010	12.8	2.95	1.59	3.36	0.54	3.40	0.71	2.07	0.307	2.09	0.306	1.1	< 0.01	0.8	0.13	28	0.2	1.26	0.43	3	1.06	5.5
P391011	5.15	1.67	0.679	2.20	0.41	2.64	0.55	1.59	0.237	1.55	0.232	1.0	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.31	0.03	3	1.08	4.0
P391012	4.18	1.37	0.296	2.10	0.39	2.42	0.49	1.42	0.218	1.50	0.221	0.9	< 0.01	0.5	< 0.05	< 5	0.1	0.22	0.03	< 2	1.04	4.8
P391013	4.23	1.51	0.527	2.34	0.40	2.54	0.54	1.64	0.243	1.50	0.216	0.9	< 0.01	0.9	0.37	< 5	< 0.1	0.25	0.08	4	1.02	2.7
P391014	5.11	1.54	0.608	2.27	0.40	2.63	0.55	1.58	0.241	1.57	0.239	0.9	< 0.01	0.7	0.09	< 5	< 0.1	0.25	0.03	12	1.05	1.7
P391015	6.84	2.22	0.809	3.20	0.57	3.55	0.73	2.14	0.328	2.18	0.327	1.4	< 0.01	0.5	0.15	< 5	< 0.1	0.44	0.08	3	1.05	3.8
P391016	1.92	0.72	0.154	1.07	0.22	1.37	0.29	0.86	0.132	0.85	0.123	0.4	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.12	0.01	< 2	1.03	4.6
P391017	8.29	2.43	0.979	3.31	0.65	4.24	0.86	2.55	0.409	2.80	0.422	1.9	0.54	0.6	< 0.05	< 5	< 0.1	0.36	0.07	13	1.04	2.2
P391018	5.26	1.76	0.622	2.57	0.50	3.29	0.68	2.05	0.313	2.13	0.320	1.2	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.22	0.03	< 2	1.01	1.6
P391019	5.02	1.81	0.570	2.59	0.46	2.92	0.62	1.90	0.304	1.96	0.294	0.9	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.17	0.03	9	1.07	2.3
P391020	5.55	1.80	0.686	2.51	0.46	2.99	0.64	1.93	0.297	1.99	0.305	0.9	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.21	0.03	6	1.05	2.7
P391021	5.72	1.74	0.703	2.59	0.49	3.42	0.73	2.13	0.320	2.07	0.314	1.0	0.41	< 0.5	< 0.05	< 5	< 0.1	0.23	0.07	2	1.08	4.7
P391022	13.0	3.47	1.45	4.37	0.77	4.64	0.92	2.61	0.380	2.37	0.367	1.6	< 0.01	1.0	0.55	12	< 0.1	1.35	0.57	14	1.07	4.6
P391023	6.90	2.09	0.900	2.85	0.54	3.49	0.75	2.19	0.335	2.18	0.319	1.2	< 0.01	0.6	0.43	7	< 0.1	0.25	0.05	7	1.02	3.8
P391024	5.32	1.87	0.664	2.69	0.48	3.08	0.66	1.99	0.290	1.80	0.276	1.1	< 0.01	< 0.5	0.27	< 5	< 0.1	0.25	0.08	13	1.02	2.1
P391025	6.43	2.16	0.852	3.03	0.57	3.66	0.77	2.34	0.351	2.21	0.328	1.2	0.92	< 0.5	0.10	< 5	< 0.1	0.21	0.10	< 2	1.07	2.4
P391026	2.95	1.00	0.433	1.31	0.26	1.73	0.36	1.08	0.169	1.09	0.149	0.5	< 0.01	< 0.5	< 0.05	< 5	< 0.1	0.10	0.05	7	1.01	0.9
P391027	6.13	0.96	0.170	0.71	0.11	0.70	0.15	0.48	0.076	0.49	0.072	1.8	< 0.01	11.7	0.95	< 5	< 0.1	2.05	0.69	12	1.03	0.5
P391028	1.94	0.55	0.130	0.45	0.10	0.65	0.14	0.41	0.067	0.55	0.089	0.4	< 0.01	47.8	0.07	7	< 0.1	2.16	2.44	< 2	1.04	0.8
P391029	17.5	3.14	0.824	1.94	0.24	1.13	0.20	0.52	0.074	0.47	0.068	2.5	0.14	< 0.5	< 0.05	10	0.2	2.47	0.73	8	1.01	1.1
P391030	18.4	3.27	0.824	1.99	0.23	1.17	0.19	0.50	0.069	0.43	0.067	2.5	< 0.01	0.7	0.38	6	< 0.1	2.39	0.81	10	1.04	0.6
P391031	16.2	2.83	0.800	1.97	0.25	1.26	0.23	0.65	0.089	0.52	0.075	2.5	0.02	0.7	0.20	22	< 0.1	2.43	0.77	11	1.04	1.4
P391032	10.6	2.37	1.02	2.39	0.44	2.78	0.57	1.65	0.251	1.69	0.260	2.0	0.08	1.1	0.23	23	0.3	2.57	0.63	54	1.02	4.6
P391033	13.7	3.21	1.11	3.48	0.61	3.57	0.70	1.97	0.299	1.91	0.292	2.1	0.19	1.0	0.24	25	< 0.1	1.36	0.47	19	1.03	3.8
P391034	11.3	2.56	0.874	3.02	0.48	2.80	0.59	1.67	0.260	1.64	0.247	1.6	0.08	2.0	0.09	6	0.9	1.31	0.34	4	1.05	4.1
P391035	5.82	1.05	0.369	1.03	0.18	1.06	0.21	0.65	0.111	0.70	0.092	0.6	< 0.01	7.3	< 0.05	< 5	0.1	0.82	0.19	3	1.01	6.4
P391036	7.65	1.53	0.457	1.44	0.24	1.43	0.27	0.78	0.124	0.79	0.115	0.7	< 0.01	3.7	0.09	< 5	< 0.1	0.82	0.17	< 2	1.03	3.6
P391037	12.1	2.07	0.716	1.96	0.31	1.93	0.40	1.25	0.182	1.18	0.169	1.0	< 0.01	0.7	0.12	< 5	< 0.1	0.80	0.22	19	1.08	2.7
P391038	12.8	2.52	0.697	2.32	0.35	1.99	0.41	1.21	0.182	1.21	0.178	0.9	< 0.01	2.7	0.16	< 5	< 0.1	0.58	0.22	12	1.03	1.9
P391039	11.5	2.43	0.775	2.24	0.39	2.32	0.47	1.35	0.197	1.27	0.183	1.0	< 0.01	8.3	0.10	< 5	< 0.1	0.63	0.38	5	1.05	1.1
P391040	7.07	2.20	0.727	2.71	0.47	3.05	0.64	1.90	0.273	1.79	0.262	1.3	< 0.01	< 0.5	0.10	< 5	< 0.1	0.66	0.15	16	1.03	3.1
P391041	9.24	2.39	0.814	2.64	0.52	3.32	0.69	1.95	0.303	1.90	0.297	1.4	< 0.01	< 0.5	0.21	< 5	0.4	0.83	0.18	6	1.02	3.7
P391042	7.69	2.08	0.694	2.69	0.48	3.21	0.64	1.85	0.285	1.76	0.267	1.2	< 0.01	< 0.5	0.41	< 5	< 0.1	0.65	0.22	3	1.07	2.1
P391043	7.53	2.14	0.745	2.65	0.51	3.21	0.68	1.89	0.295	1.93	0.304	1.5	< 0.01	< 0.5	0.23	< 5	< 0.1	0.64	0.17	< 2	1.05	2.0
P391044	13.0	2.53	0.787	2.27	0.32	1.77	0.35	1.05	0.155	0.96	0.140	1.3	< 0.01	< 0.5	0.48	10	0.4	1.67	0.76	5	1.04	1.5
P391045	14.4	3.05	0.985	2.67	0.38	2.23	0.43	1.22	0.176	1.12	0.176	1.5	0.03	< 0.5	0.71	5	< 0.1	1.83	0.58	7	1.06	0.8
P391046	6.97	1.98	0.787	2.72	0.47	3.19	0.66	1.90	0.294	2.04	0.310	1.2	< 0.01	< 0.5	0.23	< 5	< 0.1	0.54	0.11	4	1.07	1.1
P391047	241	40.6	9.51	25.2	2.65	11.2	1.60	3.70	0.409	2.17	0.320	5.2	0.27	< 0.5	0.75	15	0.5	18.7	3.34	10	1.06	0.8
P391048	191	30.4	7.38	18.5	1.90	8.10	1.17	2.72	0.308	1.72	0.243	3.9	0.45	< 0.5	0.55	10	0.4	7.69	1.35	< 2	1.03	0.5
P391049	89.3	16.2	4.31	11.6	1.30	5.71	0.84	2.04	0.256	1.27	0.164	2.9	0.79	< 0.5	0.72	10	0.1	3.19	0.67	9	1.01	0.6
P391050	69.8	12.2	3.24	8.05	0.91	3.97	0.56	1.33	0.166	0.80	0.096	2.5	0.74	< 0.5	0.62	12	0.3	4.84	1.20	9	1.04	0.4
P391051	115	21.1	5.35	13.5	1.58	6.52	0.94	2.18	0.257	1.30	0.159	3.9	1.87	< 0.5	0.53	10	0.4	4.70	1.00	5	1.01	0.6
P391052	36.2	6.02	1.63	4.69	0.57	2.95	0.54	1.48	0.199	1.33	0.177	3.2	0.36	< 0.5	0.61	13	1.8	5.97	1.58	53	1.01	2.3

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
P391053	14.8	3.25	1.30	3.26	0.55	3.18	0.60	1.71	0.272	1.71	0.242	1.8	0.86	< 0.5	0.26	< 5	< 0.1	1.60	0.33	26	1.08	3.7
P391054	4.26	1.09	0.302	0.96	0.16	0.94	0.19	0.60	0.096	0.62	0.092	0.7	0.22	< 0.5	< 0.05	7	0.4	0.86	0.42	186	1.05	0.8
P391055	9.36	1.55	0.301	1.09	0.19	1.06	0.21	0.63	0.109	0.72	0.098	2.7	0.09	18.5	1.77	< 5	0.2	3.04	1.08	25	1.04	0.4
P391056	17.0	3.79	1.56	3.86	0.66	3.90	0.75	2.03	0.324	2.00	0.277	2.1	1.05	< 0.5	0.54	< 5	< 0.1	1.70	0.33	23	1.05	2.8
P391057	12.8	2.39	0.710	1.86	0.28	1.57	0.32	0.95	0.159	1.04	0.139	2.1	0.17	< 0.5	0.57	8	0.5	2.66	0.78	19	1.03	2.6
P391058	23.7	4.15	1.28	3.23	0.41	2.25	0.41	1.21	0.197	1.30	0.206	3.0	0.41	< 0.5	1.27	15	0.2	4.90	1.57	47	1.06	1.8
P391059	22.1	3.74	1.24	2.83	0.37	1.93	0.37	1.07	0.165	1.01	0.156	2.3	0.26	< 0.5	1.28	9	< 0.1	3.59	1.12	9	1.04	1.4
P391060	20.0	3.10	0.839	2.26	0.29	1.45	0.29	0.81	0.127	0.82	0.123	2.9	0.25	< 0.5	0.60	11	0.2	4.94	1.38	19	1.07	1.1
P391061	39.3	6.72	1.60	4.04	0.51	2.61	0.46	1.27	0.187	1.09	0.156	2.7	0.29	< 0.5	0.40	11	0.2	5.42	1.27	8	1.06	3.7
P391062	22.1	3.87	1.54	3.16	0.44	2.44	0.48	1.34	0.203	1.32	0.202	3.0	0.32	< 0.5	0.79	17	< 0.1	4.64	1.40	23	1.06	1.5
P391063	22.7	4.09	1.17	3.30	0.42	2.41	0.46	1.29	0.188	1.18	0.183	2.7	0.23	< 0.5	0.42	8	0.3	3.68	1.02	< 2	1.03	2.1
P391064	21.8	4.22	1.91	3.69	0.51	2.77	0.51	1.34	0.189	1.22	0.173	1.6	0.10	< 0.5	0.23	5	0.6	1.62	0.47	5	1.03	4.9
P391065	15.6	3.32	1.11	2.93	0.48	2.77	0.55	1.60	0.223	1.36	0.211	2.0	0.17	< 0.5	0.27	5	0.5	2.26	0.68	6	1.06	3.9

Quality Control

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
NIST 694 Meas									11.25	1.90		0.012	0.34	43.90	0.88	0.56	0.120	30.13						
NIST 694 Cert									11.2	1.80		0.0116	0.330	43.6	0.860	0.510	0.110	30.2						
DNC-1 Meas									46.82	18.40		0.147	10.02	11.21	1.93	0.23	0.479	0.08					31	
DNC-1 Cert									47.15	18.34		0.150	10.13	11.49	1.890	0.234	0.480	0.070					31	
GBW 07113 Meas							1.5		72.53	12.72	1.10	0.140	0.15	0.58	2.49	5.39	0.282	0.07					5	4
GBW 07113 Cert							1.86		72.8	13.0	1.35	0.140	0.160	0.590	2.57	5.43	0.300	0.0500					5.00	4.00
LKSD-3 Meas																								
LKSD-3 Cert																								
TDB-1 Meas																								
TDB-1 Cert																								
LKSD-4 Meas				17.8	0.96																			
LKSD-4 Cert				17.7	0.990																			
LKSD-4 Meas				17.7	0.96																			
LKSD-4 Cert				17.7	0.990																			
LKSD-4 Meas				17.8	1.00																			
LKSD-4 Cert				17.7	0.990																			
LKSD-4 Meas				17.8	0.97																			
LKSD-4 Cert				17.7	0.990																			
LKSD-4 Meas				17.8	1.01																			
LKSD-4 Cert				17.7	0.990																			
LKSD-4 Meas				17.8	0.91																			
LKSD-4 Cert				17.7	0.990																			
SY-2 Meas																								
SY-2 Cert																								
SY-3 Meas																								
SY-3 Cert																								
BaSO4 Meas					14.2																			
BaSO4 Cert					14.0																			
BaSO4 Meas					14.3																			
BaSO4 Cert					14.0																			
BaSO4 Meas					14.3																			
BaSO4 Cert					14.0																			
BaSO4 Meas					14.1																			
BaSO4 Cert					14.0																			
BaSO4 Meas					13.9																			
BaSO4 Cert					14.0																			
BaSO4 Meas					14.1																			
BaSO4 Cert					14.0																			
W-2a Meas									52.32	15.46		0.166	6.25	10.85	2.23	0.62	1.055	0.16					35	< 1
W-2a Cert									52.4	15.4		0.163	6.37	10.9	2.14	0.626	1.06	0.130					36.0	1.30
DTS-2b Meas																								
DTS-2b Cert																								
SY-4 Meas						3.28	2.6		49.55	20.42		0.107	0.50	7.93	6.93	1.65	0.290	0.14					1	3
SY-4 Cert						3.5	2.86		49.9	20.69		0.108	0.54	8.05	7.10	1.66	0.287	0.131					1.1	2.6
CTA-AC-1 Meas																								
CTA-AC-1 Cert																								
BIR-1a Meas							9.0		47.91	15.76	2.02	0.172	9.51	13.25	1.83	0.03	0.972	0.02					44	< 1
BIR-1a Cert							8.34		47.96	15.50	2.06	0.175	9.700	13.30	1.82	0.030	0.96	0.021					44	0.58
Calcium Carbonate Meas						44.3																		
Calcium Carbonate Cert						44.05																		
NCS DC86312 Meas																								
NCS DC86312 Cert																								
ZW-C Meas																								
ZW-C Cert																								
GL-O Meas																								
GL-O Cert																								

Quality Control

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
JGb-2 Meas							5.4																	
JGb-2 Cert							5.41																	
JGb-2 Meas							5.1																	
JGb-2 Cert							5.41																	
JGb-2 Meas							5.6																	
JGb-2 Cert							5.41																	
NCS DC70014 Meas																								
NCS DC70014 Cert																								
NCS DC86316 Meas																								
NCS DC86316 Cert																								
NCS DC70009 (GBW07241) Meas																								
NCS DC70009 (GBW07241) Cert																								
OREAS 100a (Fusion) Meas																								
OREAS 100a (Fusion) Cert																								
OREAS 101a (Fusion) Meas																								
OREAS 101a (Fusion) Cert																								
OREAS 101b (Fusion) Meas																								
OREAS 101b (Fusion) Cert																								
JR-1 Meas																								
JR-1 Cert																								
SARM 3 Meas																								
SARM 3 Cert																								
GS311-4 Meas				1.09	0.54																			
GS311-4 Cert				1.11	0.54																			
GS311-4 Meas				1.08	0.48																			
GS311-4 Cert				1.11	0.54																			
GS311-4 Meas				1.08	0.54																			
GS311-4 Cert				1.11	0.54																			
GS311-4 Meas				1.07	0.52																			
GS311-4 Cert				1.11	0.54																			
GS311-4 Meas				1.08	0.52																			
GS311-4 Cert				1.11	0.54																			
GS311-4 Meas				1.08	0.52																			
GS311-4 Cert				1.11	0.54																			
GS900-5 Meas				0.63	0.30																			
GS900-5 Cert				0.65	0.34																			
GS900-5 Meas				0.63	0.33																			
GS900-5 Cert				0.65	0.34																			
GS900-5 Meas				0.61	0.33																			
GS900-5 Cert				0.65	0.34																			
GS900-5 Meas				0.63	0.34																			
GS900-5 Cert				0.65	0.34																			
GS900-5 Meas				0.63	0.34																			
GS900-5 Cert				0.65	0.34																			
GS900-5 Meas				0.62	0.32																			
GS900-5 Cert				0.65	0.34																			
CDN-PGMS-22 Meas	6280	1440	1250																					
CDN-PGMS-22 Cert	6150.00	1360.00	1230.00																					
CDN-PGMS-22 Meas	6020	1360	1250																					
CDN-PGMS-22 Cert	6150.00	1360.00	1230.00																					
CDN-PGMS-23 Meas	1830	418	465																					

Quality Control

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
CDN-PGMS-23 Cert	2032.000	456.000	496.000																					
CDN-PGMS-23 Meas	1920	453	466																					
CDN-PGMS-23 Cert	2032.000	456.000	496.000																					
P391006 Orig				1.25	0.08		6.0																	
P391006 Dup				1.47	0.04		5.9																	
P391009 Orig									62.55	10.35	3.23	0.049	4.67	0.44	0.28	1.77	0.358	0.10	10.77	10.32	99.12	98.66	16	1
P391009 Dup									62.49	10.32	3.26	0.049	4.75	0.44	0.28	1.78	0.372	0.11	10.77	10.32	99.19	98.73	16	1
P391010 Orig	4	4	3			0.09																		
P391010 Dup	4	4	3			0.13																		
P391015 Orig									46.51	12.61	1.89	0.170	8.84	7.84	2.25	0.96	0.999	0.07	8.02	7.02	100.2	99.15	33	< 1
P391015 Dup									46.85	12.58	2.04	0.170	8.96	7.86	2.26	0.95	1.010	0.07	8.02	7.02	100.8	99.78	33	< 1
P391016 Orig				0.95	0.22																			
P391016 Dup				0.95	0.22																			
P391019 Orig							8.4																	
P391019 Dup							8.4																	
P391020 Orig	11	12	3			3.31																		
P391020 Dup	12	12	< 2			3.30																		
P391026 Orig				2.65	0.03																			
P391026 Dup				2.62	0.03																			
P391029 Orig									67.93	16.73	0.83	0.038	2.03	1.56	6.31	1.29	0.371	0.15	1.37	1.17	100.6	100.4	5	1
P391029 Dup									68.12	16.31	0.83	0.038	2.05	1.55	6.39	1.28	0.373	0.13	1.37	1.17	100.4	100.2	5	1
P391030 Orig	< 1	< 1	< 2			1.01																		
P391030 Dup	< 1	< 1	< 2			1.00																		
P391036 Orig				2.47	0.01																			
P391036 Dup				4.00	0.04																			
P391037 Orig							7.2																	
P391037 Dup							7.5																	
P391040 Orig						6.58																		
P391040 Dup						6.67																		
P391045 Orig	3	3	< 2				6.1																	
P391045 Dup	3	3	< 2				6.2																	
P391046 Orig				1.18	0.11																			
P391046 Dup				1.18	0.11																			
P391047 Orig									42.30	11.40	3.39	0.165	8.12	12.64	2.90	3.30	1.489	1.58	4.60	3.84	99.45	98.69	23	4
P391047 Dup									42.60	11.50	3.35	0.166	8.16	12.71	2.91	3.32	1.495	1.66	4.60	3.84	100.0	99.26	23	4
P391050 Orig						2.10																		
P391050 Dup						2.13																		
P391055 Orig	3	2	167																					
P391055 Dup	3	3	166																					
P391056 Orig				0.03	0.06																			
P391056 Dup				0.06	0.21																			
P391058 Orig																								
P391058 Dup																								
P391060 Orig						2.69	1.1		68.46	13.17	0.33	0.071	1.02	4.24	2.18	3.06	0.319	0.12	5.82	5.69	100.0	99.89	5	1
P391060 Dup						2.93			69.17	13.10	0.35	0.072	1.04	4.29	2.22	3.10	0.323	0.16	5.82	5.69	100.9	100.7	6	1
P391062 Orig									62.37	14.93	< 0.01	0.041	1.48	2.28	2.82	3.34	0.419	0.15	6.56	6.11	98.58	98.13	14	1
P391062 Dup									63.50	14.81	< 0.01	0.040	1.47	2.24	2.79	3.28	0.424	0.16	6.56	6.11	99.45	99.00	14	1
P391065 Orig	4	4	< 2																					
P391065 Dup	4	4	2																					
Method Blank																								
Method Blank								< 0.1																
Method Blank								< 0.1																
Method Blank	< 1	< 1	< 2																					
Method Blank	< 1	< 1	< 2																					
Method Blank	< 1	< 1	< 2																					
Method Blank	< 1	< 1	< 2																					
Method Blank						< 0.01																		

Quality Control

Analyte Symbol	Pd	Pt	Au	C-Total	Total S	CO2	FeO	H20-	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	LOI2	Total	Total 2	Sc	Be
Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	1	1	2	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01			0.01	0.01	1	1
Analysis Method	FA-MS	FA-MS	FA-MS	IR	IR	IR	TITR	GRAV	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP

Method Blank

Quality Control

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
NIST 694 Meas	1659																							
NIST 694 Cert	1740																							
DNC-1 Meas	161	280	57	260	100						146	16.7	35						0.9		105			
DNC-1 Cert	148	270	57	247	100						144.0	18.0	38						0.96		118			
GBW 07113 Meas	8										41										499			
GBW 07113 Cert	5.00										43.0										506			
LKSD-3 Meas		80	31		30	150				72		27.9	178		< 2	2.9		2	1.5	2.4		51.6	96.4	
LKSD-3 Cert		87.0	30.0		35.0	152				78.0		30.0	178		2.00	2.70		3.00	1.30	2.30		52.0	90.0	
TDB-1 Meas		230		90	320	160				20		32.7	168									17.9	42.1	
TDB-1 Cert		251		92	323	155				23		36	156									17	41	
LKSD-4 Meas																								
LKSD-4 Cert																								
LKSD-4 Meas																								
LKSD-4 Cert																								
LKSD-4 Meas																								
LKSD-4 Cert																								
LKSD-4 Meas																								
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LKSD-4 Meas																								
LKSD-4 Cert																								
SY-2 Meas																								
SY-2 Cert																								
SY-3 Meas																								
SY-3 Cert																								
BaSO4 Meas																								
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BaSO4 Meas																								
BaSO4 Cert																								
BaSO4 Meas																								
BaSO4 Cert																								
BaSO4 Meas																								
BaSO4 Cert																								
W-2a Meas	280	90	43	70	110	80	17	1.8		19	193		92	7.6	< 2	0.6				0.9	173			
W-2a Cert	262	92.0	43.0	70.0	110	80.0	17.0	1.00		21.0	190		94.0	7.90	0.600	0.0460				0.990	182			
DTS-2b Meas		> 10000	124	3470																				
DTS-2b Cert		15500	120	3780																				
SY-4 Meas	11										1197										347			
SY-4 Cert	8.0										1191										340			
CTA-AC-1 Meas					50																	> 2000	> 3000	
CTA-AC-1 Cert					54.0																	2176	3326	
BIR-1a Meas	339	390	53	180	130	60	15				109	15.0									8			
BIR-1a Cert	310	370	52	170	125	70	16				110	16									6			
Calcium Carbonate Meas																								
Calcium Carbonate Cert																								
NCS DC86312 Meas												971										> 2000	194	
NCS DC86312 Cert												976										2360	190	
ZW-C Meas																								
ZW-C Cert																								
GL-O Meas																								
GL-O Cert																								

Quality Control

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
JGb-2 Meas																								
JGb-2 Cert																								
JGb-2 Meas																								
JGb-2 Cert																								
JGb-2 Meas																								
JGb-2 Cert																								
NCS DC70014 Meas			25	80	2620	7520	25					32.1			> 100	16.4			180			47.0	92.6	10.0
NCS DC70014 Cert			26	70	2600	7400	25.2					32.1			270	16.7			180			45.3	87.0	10.8
NCS DC86316 Meas																								
NCS DC86316 Cert																								
NCS DC70009 (GBW07241) Meas		30		< 20	920	100	16	11.2	71	506		138					1.3	> 1000		42.5				8.30
NCS DC70009 (GBW07241) Cert		30		2.8	960	100	16.5	11.2	69.9	500		128					1.3	1701		41				7.9
OREAS 100a (Fusion) Meas			17		170							134			23							282	503	46.5
OREAS 100a (Fusion) Cert			18.1		169							142			24.1							260	463	47.1
OREAS 101a (Fusion) Meas			47		420							174			20							878	1500	132
OREAS 101a (Fusion) Cert			48.8		434							183			21.9							816	1396	134
OREAS 101b (Fusion) Meas			44	< 20	410							171			19							833	1430	126
OREAS 101b (Fusion) Cert			47	9	416							178			20.9							789	1331	127
JR-1 Meas				< 20			17			244			95	14.3	3	0.7	< 0.1	3	1.3	20.4				
JR-1 Cert				1.67			16.1			257			99.9	15.2	3.25	0.031	0.028	2.86	1.19	20.8				
SARM 3 Meas													> 10000	988										
SARM 3 Cert													11119	978										
GS311-4 Meas																								
GS311-4 Cert																								
GS311-4 Meas																								
GS311-4 Cert																								
GS311-4 Meas																								
GS311-4 Cert																								
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GS900-5 Meas																								
GS900-5 Cert																								
CDN-PGMS-22 Meas																								
CDN-PGMS-22 Cert																								
CDN-PGMS-22 Meas																								
CDN-PGMS-22 Cert																								
CDN-PGMS-23 Meas																								

Quality Control

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
CDN-PGMS-23 Cert																								
CDN-PGMS-23 Meas																								
CDN-PGMS-23 Cert																								
P391006 Orig																								
P391006 Dup																								
P391009 Orig	108	350	51	180	330	1250	18	1.6	30	50	22	12.3	75	2.6	10	< 0.5	0.2	9	0.4	1.9	535	15.2	32.2	3.90
P391009 Dup	107	330	47	170	270	1260	17	0.8	9	49	21	11.9	75	2.5	8	0.6	0.2	9	0.3	1.9	541	14.2	30.1	3.73
P391010 Orig																								
P391010 Dup																								
P391015 Orig	278	320	49	170	90	130	16	1.7	< 5	21	60	19.9	59	1.9	< 2	0.6	< 0.1	< 1	< 0.2	1.6	454	3.00	7.90	1.34
P391015 Dup	277	310	49	170	100	130	16	1.5	< 5	22	61	19.8	60	1.9	< 2	0.6	< 0.1	< 1	< 0.2	1.6	458	3.50	8.79	1.47
P391016 Orig																								
P391016 Dup																								
P391019 Orig																								
P391019 Dup																								
P391020 Orig																								
P391020 Dup																								
P391026 Orig																								
P391026 Dup																								
P391029 Orig	52	60	10	40	50	90	19	0.7	< 5	27	433	5.7	96	< 0.2	< 2	0.9	< 0.1	< 1	0.3	1.5	604	15.2	32.6	4.29
P391029 Dup	49	70	10	40	10	90	20	0.7	< 5	26	433	5.9	101	< 0.2	< 2	0.9	< 0.1	< 1	0.3	1.6	604	15.7	33.8	4.42
P391030 Orig																								
P391030 Dup																								
P391036 Orig																								
P391036 Dup																								
P391037 Orig																								
P391037 Dup																								
P391040 Orig																								
P391040 Dup																								
P391045 Orig																								
P391045 Dup																								
P391046 Orig																								
P391046 Dup																								
P391047 Orig	228	30	40	60	70	140	21	2.0	< 5	139	1397	41.1	194	12.4	< 2	1.6	< 0.1	< 1	< 0.2	7.1	1579	182	431	59.9
P391047 Dup	229	30	41	60	70	140	21	1.9	< 5	138	1402	41.9	196	13.1	< 2	1.9	< 0.1	1	< 0.2	7.2	1582	177	420	57.7
P391050 Orig																								
P391050 Dup																								
P391055 Orig																								
P391055 Dup																								
P391056 Orig																								
P391056 Dup																								
P391058 Orig																								
P391058 Dup																								
P391060 Orig	41	< 20	9	20	40	230	17	0.9	< 5	86	211	8.0	116	2.1	< 2	1.3	< 0.1	< 1	< 0.2	1.0	695	25.2	49.8	5.69
P391060 Dup	40										216										708			
P391062 Orig	73	60	23	60	110	610	19	1.3	< 5	92	240	12.7	107	2.2	2	1.7	< 0.1	1	< 0.2	1.8	586	25.3	50.8	6.00
P391062 Dup	75	60	23	60	120	580	19	< 0.5	< 5	87	242	12.2	113	2.8	3	1.6	< 0.1	1	< 0.2	1.7	578	25.0	49.2	5.86
P391065 Orig																								
P391065 Dup																								
Method Blank		< 20	< 1	< 20	< 10	< 30	< 1	< 0.5	< 5	< 1		< 0.5	< 1	< 0.2	< 2	< 0.5	< 0.1	< 1	< 0.2	< 0.1		< 0.05	< 0.05	< 0.01
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								

Quality Control

Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	0.5	5	1	2	0.5	1	0.2	2	0.5	0.1	1	0.2	0.1	3	0.05	0.05	0.01
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS

Method Blank

Quality Control

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
NIST 694 Meas																						
NIST 694 Cert																						
DNC-1 Meas	5.08		0.566							2.00												
DNC-1 Cert	5.20		0.59							2.0												
GBW 07113 Meas																						
GBW 07113 Cert																						
LKSD-3 Meas	43.0	7.88	1.38		0.87	4.90				2.84	0.413		0.68					10.6				
LKSD-3 Cert	44.0	8.00	1.50		1.00	4.90				2.70	0.400		0.700					11.4				
TDB-1 Meas	24.1		1.91							3.24								2.95				
TDB-1 Cert	23		2.1							3.4								2.7				
LKSD-4 Meas																						
LKSD-4 Cert																						
LKSD-4 Meas																						
LKSD-4 Cert																						
LKSD-4 Meas																						
LKSD-4 Cert																						
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LKSD-4 Meas																						
LKSD-4 Cert																						
LKSD-4 Meas																						
LKSD-4 Cert																						
SY-2 Meas																				106		
SY-2 Cert																				88.0		
SY-3 Meas																				87		
SY-3 Cert																				107		
BaSO4 Meas																						
BaSO4 Cert																						
BaSO4 Meas																						
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BaSO4 Meas																						
BaSO4 Cert																						
BaSO4 Meas																						
BaSO4 Cert																						
BaSO4 Meas																						
BaSO4 Cert																						
W-2a Meas	13.2	3.37	1.10		0.65	3.89	0.79		0.348	2.06			0.49	< 0.5	0.05	10	0.2	2.50	0.55			
W-2a Cert	13.0	3.30	1.00		0.630	3.60	0.760		0.380	2.10			0.500	0.300	0.200	9.30	0.0300	2.40	0.530			
DTS-2b Meas																						
DTS-2b Cert																						
SY-4 Meas																						
SY-4 Cert																						
CTA-AC-1 Meas	1170	171	45.8	128	14.9					10.9	1.11		2.52					23.6	4.17			
CTA-AC-1 Cert	1087	162	46.7	124	13.9					11.4	1.08		2.65					21.8	4.4			
BIR-1a Meas	2.67	1.16	0.554	1.87						1.72		0.6				< 5						
BIR-1a Cert	2.5	1.1	0.55	2.0						1.7		0.60				3						
Calcium Carbonate Meas																						
Calcium Carbonate Cert																						
NCS DC86312 Meas	1600			223	34.2	188	35.6	96.1	14.3	87.4	12.1							25.9				
NCS DC86312 Cert	1600			225.0	34.6	183	36	96.2	15.1	87.79	11.96							23.6				
ZW-C Meas													84.1	334	33.9							
ZW-C Cert													82	320	34							
GL-O Meas																						6.1
GL-O Cert																						5.58

Quality Control

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
JGb-2 Meas																						
JGb-2 Cert																						
JGb-2 Meas																						
JGb-2 Cert																						
JGb-2 Meas																						
JGb-2 Cert																						
NCS DC70014 Meas	37.8	7.80	1.63	7.12	1.14	6.40	1.23	3.39	0.535	3.24	0.478					> 10000	80.3					
NCS DC70014 Cert	39.9	8.0	1.8	7.4	1.1	6.7	1.3	3.5	0.57	3.3	0.50					27200	80.3					
NCS DC86316 Meas												712										
NCS DC86316 Cert												712										
NCS DC70009 (GBW07241) Meas	32.9	13.0		14.8	3.31	21.5	4.39	13.2	2.34	16.0	2.25			2200				29.9				
NCS DC70009 (GBW07241) Cert	32.9	12.5		14.8	3.3	20.7	4.5	13.4	2.2	14.9	2.4			2200				28.3				
OREAS 100a (Fusion) Meas	149	24.5	3.52		3.66	22.9	4.82	14.0	2.36	15.1	2.09							52.2	136			
OREAS 100a (Fusion) Cert	152	23.6	3.71		3.80	23.2	4.81	14.9	2.31	14.9	2.26							51.6	135			
OREAS 101a (Fusion) Meas	396	50.6	7.86		5.46	32.5	6.60	19.2	2.93	18.2	2.47							36.3	421			
OREAS 101a (Fusion) Cert	403	48.8	8.06		5.92	33.3	6.46	19.5	2.90	17.5	2.66							36.6	422			
OREAS 101b (Fusion) Meas	379	48.7	7.51		5.37	31.5	6.36	18.5	2.89	17.9	2.43							38.2	396			
OREAS 101b (Fusion) Cert	378	48	7.77		5.37	32.1	6.34	18.7	2.66	17.6	2.58							37.1	396			
JR-1 Meas	24.6	6.02	0.294	5.42	1.04				0.700	4.67	0.699	4.2	1.83	1.7	1.55	22		27.5	9.08			
JR-1 Cert	23.3	6.03	0.30	5.06	1.01				0.67	4.55	0.71	4.51	1.86	1.59	1.56	19.3		26.7	8.88			
SARM 3 Meas																						
SARM 3 Cert																						
GS311-4 Meas																						
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CDN-PGMS-22 Meas																						
CDN-PGMS-22 Cert																						
CDN-PGMS-23 Meas																						

Quality Control

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
CDN-PGMS-23 Cert																						
CDN-PGMS-23 Meas																						
CDN-PGMS-23 Cert																						
P391006 Orig																						
P391006 Dup																						
P391009 Orig	16.1	3.20	1.47	2.74	0.39	2.28	0.48	1.55	0.258	1.79	0.286	1.4	0.30	3.2	0.43	54	6.4	2.63	0.75			
P391009 Dup	14.5	2.94	1.46	2.63	0.38	2.18	0.46	1.48	0.226	1.54	0.279	1.4	0.29	1.5	0.55	35	0.5	2.47	0.74			
P391010 Orig																						
P391010 Dup																						
P391015 Orig	6.81	2.11	0.777	3.16	0.56	3.52	0.72	2.12	0.326	2.16	0.325	1.4	< 0.01	0.5	0.17	< 5	< 0.1	0.45	0.08			
P391015 Dup	6.87	2.32	0.842	3.23	0.58	3.59	0.73	2.16	0.330	2.20	0.329	1.4	< 0.01	0.5	0.14	< 5	< 0.1	0.43	0.07			
P391016 Orig																						
P391016 Dup																						
P391019 Orig																						
P391019 Dup																						
P391020 Orig																						
P391020 Dup																						
P391026 Orig																						
P391026 Dup																						
P391029 Orig	17.2	3.03	0.821	1.90	0.23	1.13	0.19	0.51	0.072	0.47	0.070	2.5	0.10	0.7	< 0.05	10	0.2	2.46	0.73			
P391029 Dup	17.8	3.24	0.828	1.97	0.24	1.14	0.20	0.52	0.076	0.47	0.066	2.5	0.17	< 0.5	0.36	9	0.2	2.49	0.72			
P391030 Orig																						
P391030 Dup																						
P391036 Orig																						
P391036 Dup																						
P391037 Orig																						
P391037 Dup																						
P391040 Orig																						
P391040 Dup																						
P391045 Orig																						
P391045 Dup																						
P391046 Orig																						
P391046 Dup																						
P391047 Orig	241	40.4	9.45	25.2	2.69	11.3	1.65	3.73	0.405	2.10	0.327	5.4	0.26	< 0.5	0.75	15	0.4	19.0	3.40			
P391047 Dup	241	40.7	9.57	25.2	2.61	11.0	1.55	3.67	0.413	2.23	0.313	5.0	0.27	< 0.5	0.75	15	0.5	18.3	3.28			
P391050 Orig																						
P391050 Dup																						
P391055 Orig																						
P391055 Dup																						
P391056 Orig																						
P391056 Dup																						
P391058 Orig																						2.0
P391058 Dup																						1.5
P391060 Orig	20.0	3.10	0.839	2.26	0.29	1.45	0.29	0.81	0.127	0.82	0.123	2.9	0.25	< 0.5	0.60	11	0.2	4.94	1.38			
P391060 Dup																						
P391062 Orig	22.4	3.92	1.58	3.13	0.44	2.45	0.48	1.35	0.212	1.42	0.214	2.9	0.29	< 0.5	0.79	23	0.7	4.59	1.38			
P391062 Dup	21.8	3.81	1.51	3.20	0.45	2.43	0.47	1.34	0.193	1.23	0.190	3.1	0.34	< 0.5	0.79	12	< 0.1	4.68	1.42			
P391065 Orig																						
P391065 Dup																						
Method Blank	< 0.05	< 0.01	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01	< 0.002	< 0.1	< 0.01	< 0.5	< 0.05	< 5	< 0.1	< 0.05	< 0.01			
Method Blank																						
Method Blank																						
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Quality Control

Analyte Symbol	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U	B	Mass	H20+
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	%
Detection Limit	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01	2		0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PGNAA	PGNAA	IR
Method Blank																						< 0.1