Quality Analysis ... *Innovative Technologies*

Date Submitted: 20-Jan-16
Invoice No.: A16-00457-ReAssay
Invoice Date: 11-Mar-16
Your Reference: 3000589277

Geological Survey of Canada
475-601 BOOTH ST
OTTAWA ON K1A0E8
Canada

ATTN: Alex Zagorevski

CERTIFICATE OF ANALYSIS

74 Rock samples were submitted for analysis.

The following analytical package(s) were requested: Code 4LITHORES (11+) Major Elements Fusion ICP(WRA)/Trace Elements Fusion ICP/MS(WRA4B2)

REPORT **A16-00457-ReAssay**

Notes:

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. Zr is now being reported from FUS-ICP instead of FUS-MS.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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Analyte Symbol	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit																20	1	20	10	30	1	0.5	5
Method Code	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-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
15ZE-1020b																1010	39	220	< 10	40	4	1.6	< 5
15ZE-ac077																130	32	60	50	70	15	1.5	< 5

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
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
Lower Limit	1		0.5		0.2	2	0.5	0.1	1	0.2	0.1		0.05	0.05	0.01	0.05	0.01	0.005	0.01	0.01	0.01	0.01	0.01
Method Code	FUS-MS	FUS-ICP	FUS-MS	FUS-ICP	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-MS	FUS-MS
15ZE-1020b	< 1		2.4		0.6	< 2	< 0.5	< 0.1	< 1	0.4	< 0.1		0.28	0.38	0.05	0.30	0.10	0.039	0.23	0.05	0.37	0.09	0.32
15ZE-ac077	1		28.2		1.9	< 2	< 0.5	< 0.1	< 1	0.4	< 0.1		2.98	9.47	1.57	8.65	2.98	1.13	4.15	0.76	5.02	1.06	3.11

Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.005	0.01	0.002	0.1	0.01	0.5	0.05	5	0.1	0.05	0.01
Method Code	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
15ZE-1020b	0.049	0.33	0.062	< 0.1	0.24	< 0.5	< 0.05	< 5	< 0.1	0.07	0.02
15ZE-ac077	0.448	3.16	0.445	2.0	0.36	1.0	< 0.05	< 5	< 0.1	0.20	0.08

Analyte Symbol	Cr	Ni	Cu	Zn	Rb	Y	La	Ce	Nd	Eu	Dy	Yb	Th
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	20	20	10	30	1	0.5	0.05	0.05	0.05	0.005	0.01	0.01	0.05
Method Code	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
TDB-1 Meas	230	100	310	140	18	33.0	16.9	39.5	23.9	2.00	7.20	3.00	2.70
TDB-1 Cert	251	92	323	155	23	36	17	41	23	2.1	8	3.4	2.7