



Date Submitted: 24-Jul-18
Invoice No.: A18-09639 (i)
Invoice Date: 17-Aug-18
Your Reference:

ATKINSON GEOSCIENCES

ATTN: BRIAN ATKINSON

CERTIFICATE OF ANALYSIS

83 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2 Au - Fire Assay AA
Code 3A-Small HMC INAA(INAAGEO)
Code 3C Aqua Regia ICP(AQUAGEO)
Code 9-XRD X-Ray Diffraction

REPORT A18-09639 (i)

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

Unaltered silicates and resistate minerals may not be dissolved. Values which exceed upper limit should be assayed.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results

Activation Laboratories Ltd.

Report: A18-09639

Analyte Symbol	Au	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se	Sr	Ta
Unit Symbol	ppb	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	5	5	5	2	200	5	1	5	10	2	0.02	1	5	50	20	0.05	200	50	0.2	0.1	20	0.2	1
Method Code	FA-AA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
1000	5																						
1001	6																						
1002	6																						
1003	< 5																						
1004	< 5																						
1005	< 5																						
1006	5																						
1007	6																						
1008	5																						
1009	< 5																						
1010	< 5																						
1011	6																						
1012	8																						
1013	6																						
1014	6																						
1015	6																						
1016	6																						
1017	< 5																						
1018	7																						
1019	6																						
1020	6																						
1021	7																						
1022	< 5																						
1023	5																						
1024	5																						
1025	< 5																						
1026	< 5																						
1027	< 5																						
1028	< 5																						
1029	8																						
1030	5																						
1031	< 5																						
1032	6																						
1033	< 5																						
1034	< 5																						
1035	715																						
1036	8																						
1037	8																						
1038	5																						
1039	5																						
1040	17																						
1041	13																						

Analyte Symbol	Au	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se	Sr	Ta
Unit Symbol	ppb	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	5	5	5	2	200	5	1	5	10	2	0.02	1	5	50	20	0.05	200	50	0.2	0.1	20	0.2	1
Method Code	FA-AA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
1042	12																						
1043	17																						
1044	14																						
1045	13																						
1046	20																						
1047	15																						
1048	16																						
1049	16																						
1050	12																						
1051	18																						
1052	17																						
1053	15																						
1054	16																						
1055	15																						
1056	15																						
1057	14																						
1058	16																						
1059	20																						
1060	15																						
1061	12																						
1062	12																						
1063	13																						
1064	19																						
1065	22																						
1066	12																						
1067	12																						
1068	13																						
1069	16																						
1070	19																						
1071	14																						
1072	18																						
1073	14																						
1074	13																						
1075	18																						
1076	14																						
1077	17																						
1078	14																						
1079	14																						
1080	14																						
1081	18																						
N-20171		> 30000	< 5	< 2	< 200	< 5	< 1	40	200	< 2	21.1	226	7	< 50	< 20	0.06	< 200	< 50	< 0.2	54.9	< 20	< 0.2	335

Analyte Symbol	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Lower Limit	0.5	0.5	4	200	1	3	10	0.1	0.2	2	0.2	0.05		0.2	0.5	1	2	2	1	2	1	0.01
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
1000																						
1001																						
1002																						
1003																						
1004																						
1005																						
1006																						
1007																						
1008																						
1009																						
1010																						
1011																						
1012																						
1013																						
1014																						
1015																						
1016																						
1017																						
1018																						
1019																						
1020																						
1021																						
1022																						
1023																						
1024																						
1025																						
1026																						
1027																						
1028																						
1029																						
1030																						
1031																						
1032																						
1033																						
1034																						
1035																						
1036																						
1037																						
1038																						
1039																						
1040																						
1041																						

Results

Activation Laboratories Ltd.

Report: A18-09639

Analyte Symbol	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Lower Limit	0.5	0.5	4	200	1	3	10	0.1	0.2	2	0.2	0.05		0.2	0.5	1	2	2	1	2	1	0.01
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
1042																						
1043																						
1044																						
1045																						
1046																						
1047																						
1048																						
1049																						
1050																						
1051																						
1052																						
1053																						
1054																						
1055																						
1056																						
1057																						
1058																						
1059																						
1060																						
1061																						
1062																						
1063																						
1064																						
1065																						
1066																						
1067																						
1068																						
1069																						
1070																						
1071																						
1072																						
1073																						
1074																						
1075																						
1076																						
1077																						
1078																						
1079																						
1080																						
1081																						
N-20171	384	19.8	< 4	< 200	723	1290	410	72.0	1.9	< 2	8.7	0.14	2.72	< 0.2	< 0.5	4	905	< 2	5	27	39	< 0.01

Analyte Symbol	Au	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se	Sr	Ta
Unit Symbol	ppb	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	5	5	5	2	200	5	1	5	10	2	0.02	1	5	50	20	0.05	200	50	0.2	0.1	20	0.2	1
Method Code	FA-AA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
OREAS 45d (Aqua Regia) Meas																							
OREAS 45d (Aqua Regia) Cert																							
OREAS 214 Meas	2940																						
OREAS 214 Cert	3030																						
OREAS 214 Meas	2970																						
OREAS 214 Cert	3030																						
OREAS 214 Meas	2940																						
OREAS 214 Cert	3030																						
OREAS 218 Meas	540																						
OREAS 218 Cert	531																						
OREAS 218 Meas	533																						
OREAS 218 Cert	531																						
OREAS 218 Meas	538																						
OREAS 218 Cert	531																						
OREAS 905 (INAA) Meas		378		34	2700		< 1	16		7	4.07	7						140	1.9			< 0.2	< 1
OREAS 905 (INAA) Cert		391		36.2	2800		0.608	15.3		7.10	4.23	7.26						137	1.96			0.0159	1.38
Oreas 621 (Aqua Regia) Meas																							
Oreas 621 (Aqua Regia) Cert																							
1009 Orig	< 5																						
1009 Dup	9																						
1024 Orig	5																						
1024 Dup	5																						
1029 Orig	10																						
1029 Dup	6																						
1040 Orig	14																						
1040 Dup	20																						
1046 Orig	20																						
1046 Dup	19																						
1060 Orig	14																						
1060 Dup	15																						
1079 Orig	14																						
1079 Dup	14																						
N-20171 Orig																							

Analyte Symbol	Au	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se	Sr	Ta
Unit Symbol	ppb	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	5	5	5	2	200	5	1	5	10	2	0.02	1	5	50	20	0.05	200	50	0.2	0.1	20	0.2	1
Method Code	FA-AA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
N-20171 Dup																							
Method Blank																							
Method Blank		< 5	< 5	< 2	< 200	< 5	< 1	< 5	< 10	< 2	< 0.02	< 1	< 5	< 50	< 20	< 0.05	< 200	< 50	< 0.2	< 0.1	< 20	< 0.2	< 1
Method Blank	< 5																						
Method Blank	< 5																						
Method Blank	5																						
Method Blank	< 5																						
Method Blank	< 5																						
Method Blank	5																						

Analyte Symbol	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Lower Limit	0.5	0.5	4	200	1	3	10	0.1	0.2	2	0.2	0.05		0.2	0.5	1	2	2	1	2	1	0.01
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-4 Meas														3.1	0.6	6360	151	296	34	41	67	1.65
GXR-4 Cert														4.0	0.860	6520	155	310	42.0	52.0	73.0	1.77
GXR-6 Meas														0.3	< 0.5	69	1060	< 2	20	89	118	0.01
GXR-6 Cert														1.30	1.00	66.0	1010	2.40	27.0	101	118	0.0160
OREAS 45d (Aqua Regia) Meas																365	452		202	13	37	0.04
OREAS 45d (Aqua Regia) Cert																345.0	400.000		176.0	17.00	30.6	0.045
OREAS 214 Meas																						
OREAS 214 Cert																						
OREAS 214 Meas																						
OREAS 214 Cert																						
OREAS 214 Meas																						
OREAS 214 Cert																						
OREAS 218 Meas																						
OREAS 218 Cert																						
OREAS 218 Meas																						
OREAS 218 Cert																						
OREAS 218 Meas																						
OREAS 218 Cert																						
OREAS 905 (INAA) Meas	14.0	4.8	< 4	< 200	50	91	40	7.3	1.5	< 2	0.8											
OREAS 905 (INAA) Cert	14.7	5.00	3.02	139	48.0	96.0	40.5	7.64	1.46	0.810	0.760											
Oreas 621 (Aqua Regia) Meas														65.4	299	3740	582	13	24	> 5000	> 10000	4.44
Oreas 621 (Aqua Regia) Cert														68.0	278	3660	520	13.3	25.8	13600	51700	4.50
1009 Orig																						
1009 Dup																						
1024 Orig																						
1024 Dup																						
1029 Orig																						
1029 Dup																						
1040 Orig																						
1040 Dup																						
1046 Orig																						
1046 Dup																						
1060 Orig																						
1060 Dup																						
1079 Orig																						
1079 Dup																						
N-20171 Orig														< 0.2	< 0.5	4	910	< 2	6	27	40	< 0.01

Analyte Symbol	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Lower Limit	0.5	0.5	4	200	1	3	10	0.1	0.2	2	0.2	0.05		0.2	0.5	1	2	2	1	2	1	0.01
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
N-20171 Dup														< 0.2	< 0.5	4	901	< 2	5	26	38	< 0.01
Method Blank														< 0.2	< 0.5	1	< 2	< 2	< 1	< 2	< 1	< 0.01
Method Blank	< 0.5	< 0.5	< 4	< 200	< 1	< 3	< 10	< 0.1	< 0.2	< 2	< 0.2	< 0.05	1.00									
Method Blank																						
Method Blank																						
Method Blank																						
Method Blank																						
Method Blank																						
Method Blank																						
Method Blank																						