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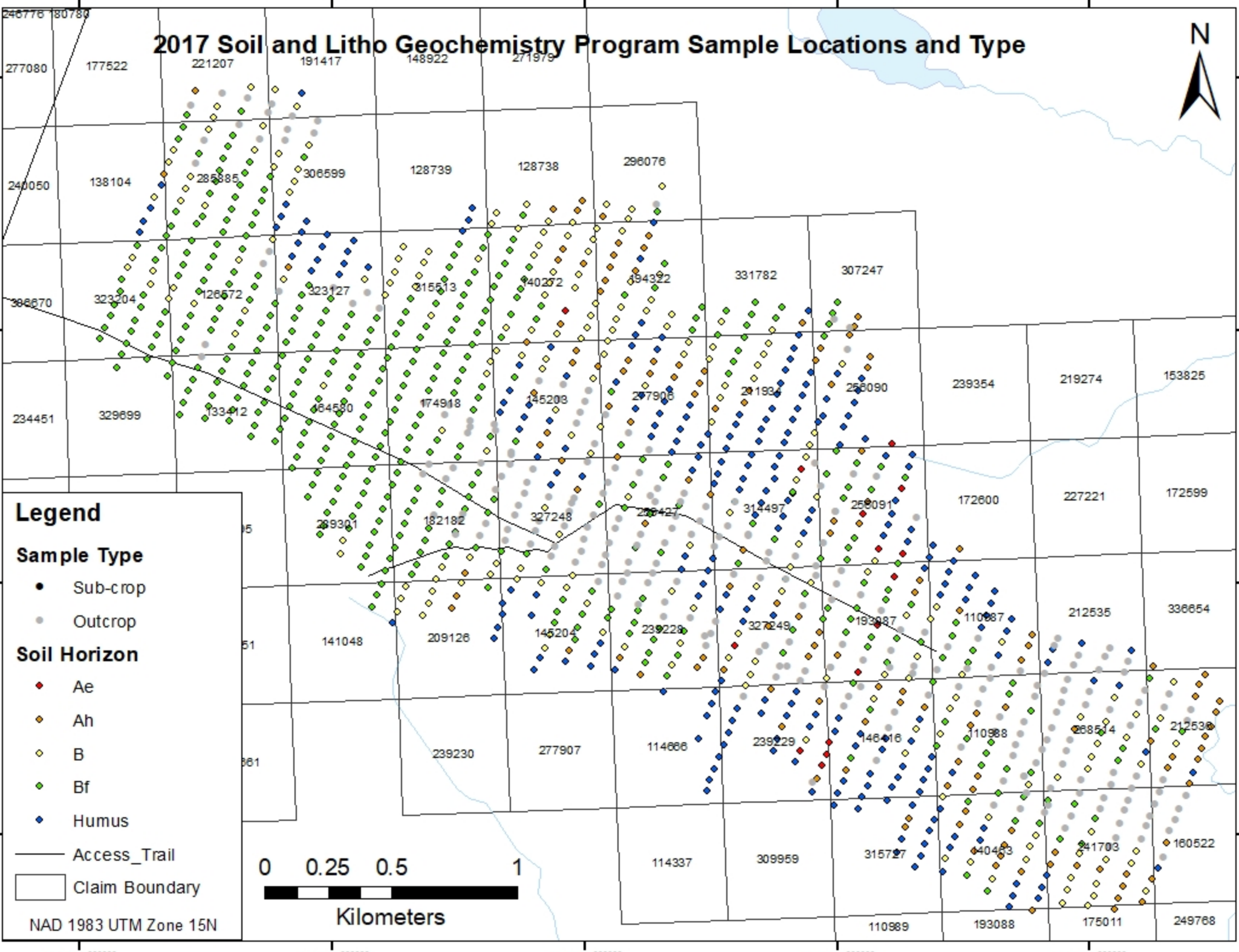
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# 2017 Soil and Litho Geochemical Sampling Program

Claim Number	Number of Soil Samples Collected	Number of Litho-Geochem Samples Collected
110987	27	6
110988	24	18
114666	9	-
126572	39	3
128738	9	-
128739	2	-
133412	27	1
138104	7	-
140272	39	
140463	34	5
141048	4	-
145203	32	11
145204	30	1
146416	33	7
160522	2	7
164580	39	-
172600	3	-
174918	34	8
175011	1	-
182182	32	12
191417	3	2
193087	28	15
193088	1	-
194322	31	-
209126	12	-
211934	45	-
212535	4	9
212536	20	5
221207	6	4
239228	27	15
239229	25	3
241703	27	15
256090	21	1
256091	33	7
259427	21	21
268514	17	21
277906	35	3
285885	38	4
289301	27	-
296076	6	1
306599	13	4
307247	6	2
314497	36	10
315513	37	-
315727	13	-
323127	31	5
323204	23	-
327248	13	28
327249	35	15
329699	3	-
331782	11	-
336654	1	-
<b>Total</b>	<b>1076</b>	<b>269</b>

# 2017 Soil and Litho Geochemistry Program Sample Locations and Type



## Legend

### Sample Type

- Sub-crop
- Outcrop

### Soil Horizon

- Ae
- Ah
- B
- Bf
- Humus

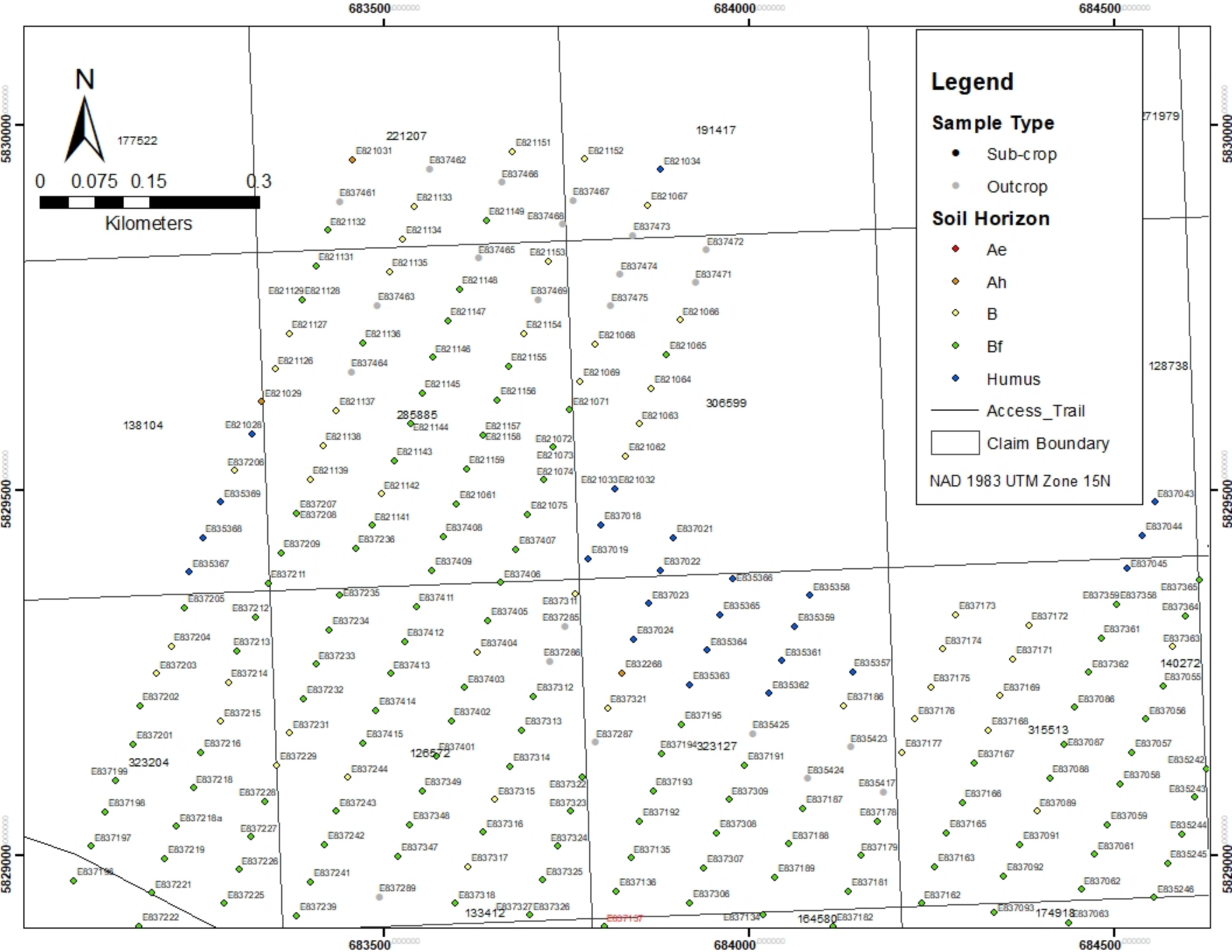
- Access\_Trail
- Claim Boundary

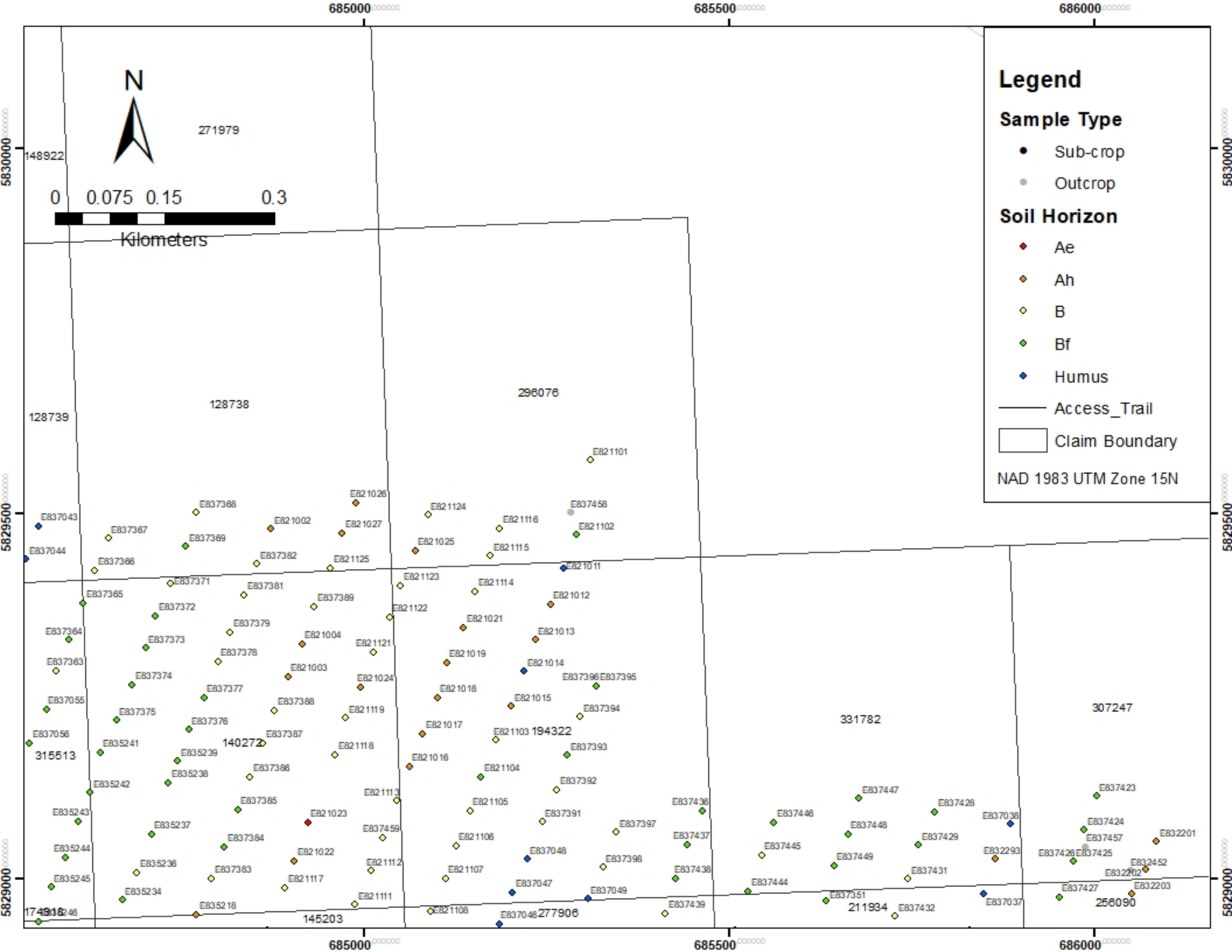
NAD 1983 UTM Zone 15N

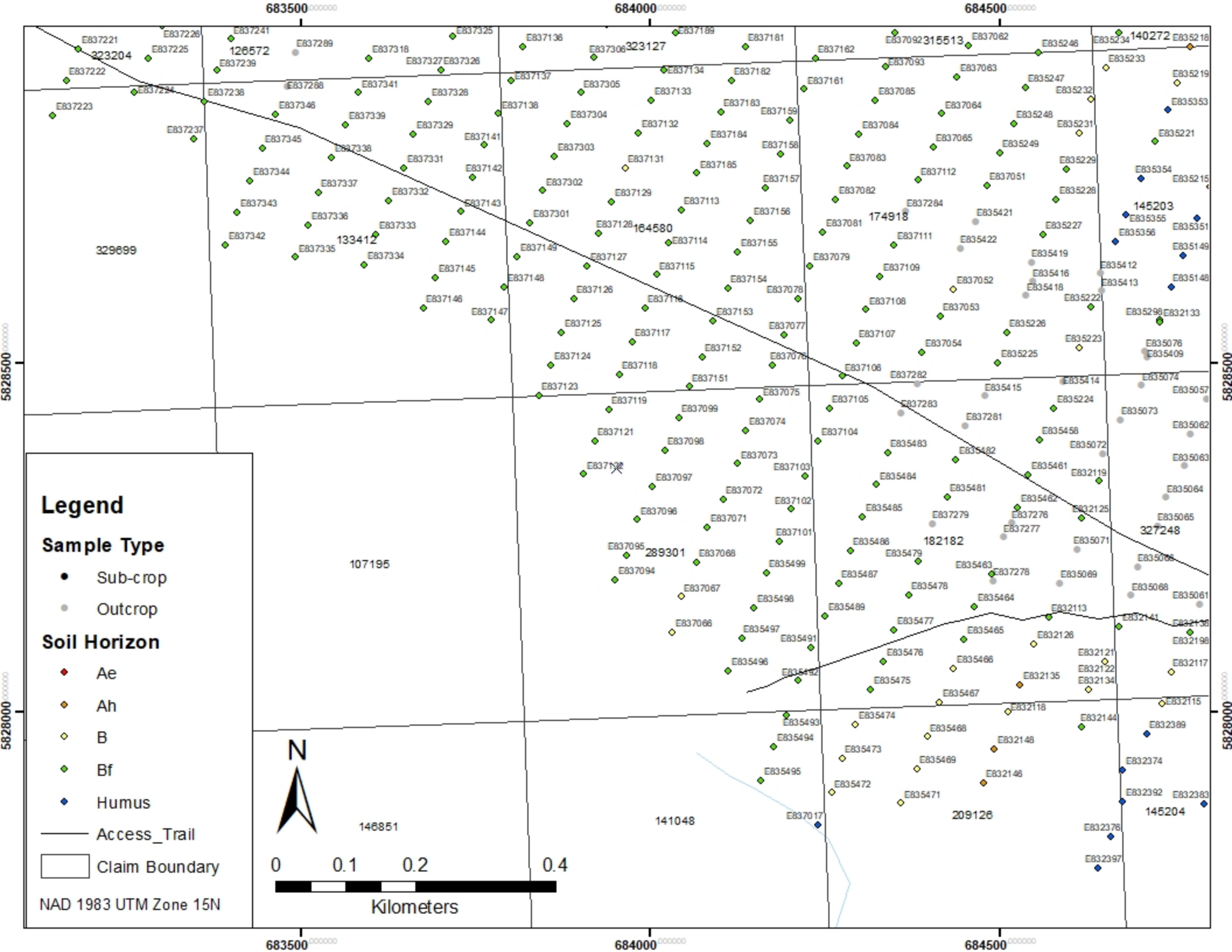
0 0.25 0.5 1

Kilometers









**Legend**

**Sample Type**

- Sub-crop
- Outcrop

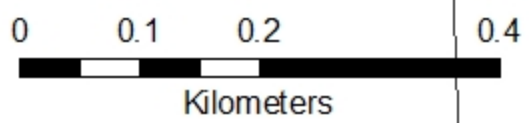
**Soil Horizon**

- ◆ Ae
- ◆ Ah
- ◆ B
- ◆ Bf
- ◆ Humus

— Access\_Trail

□ Claim Boundary

NAD 1983 UTM Zone 15N



683500

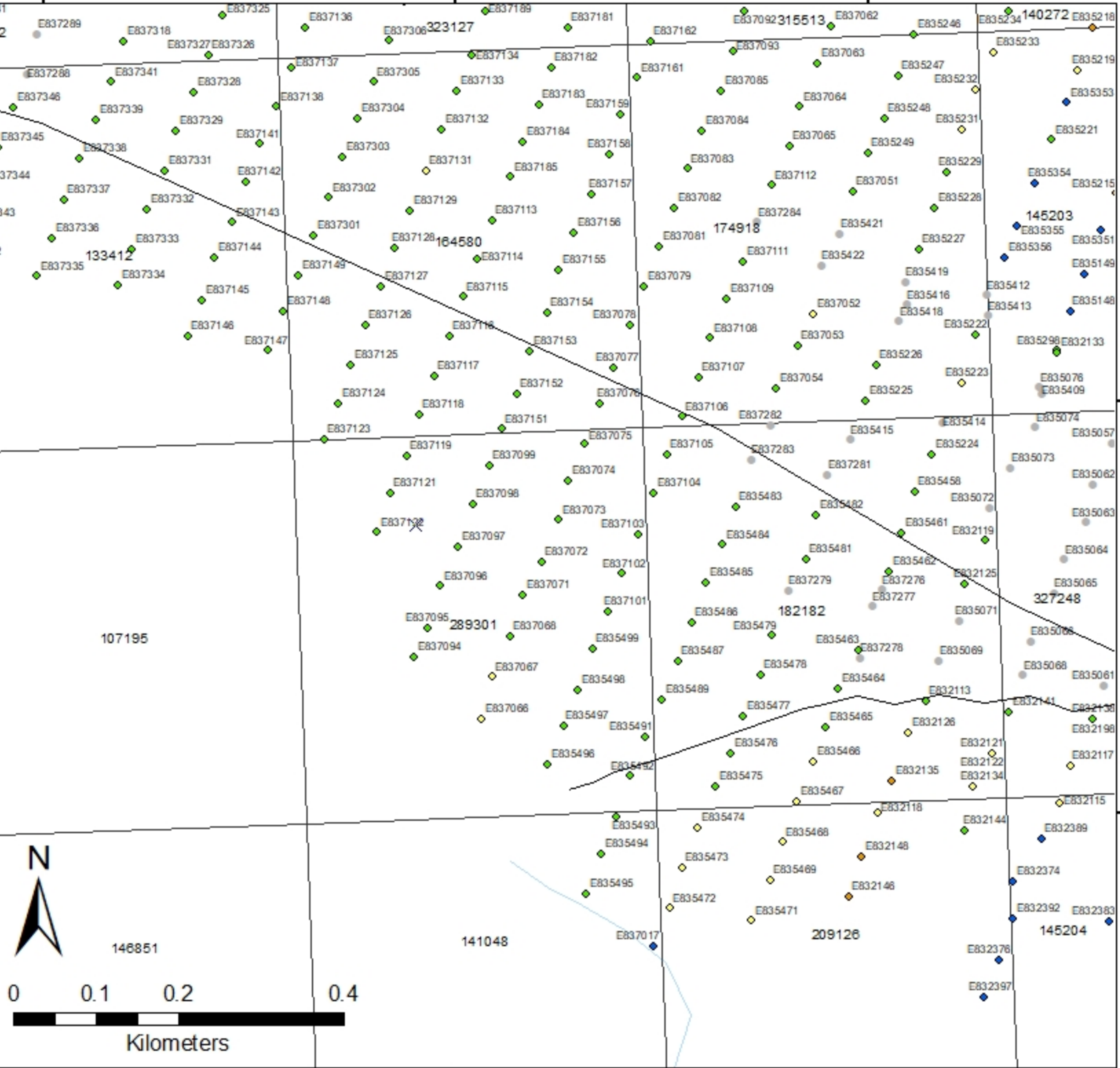
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684500

107195

146851

141048



329699

133412

164580

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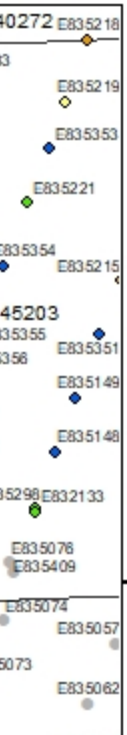
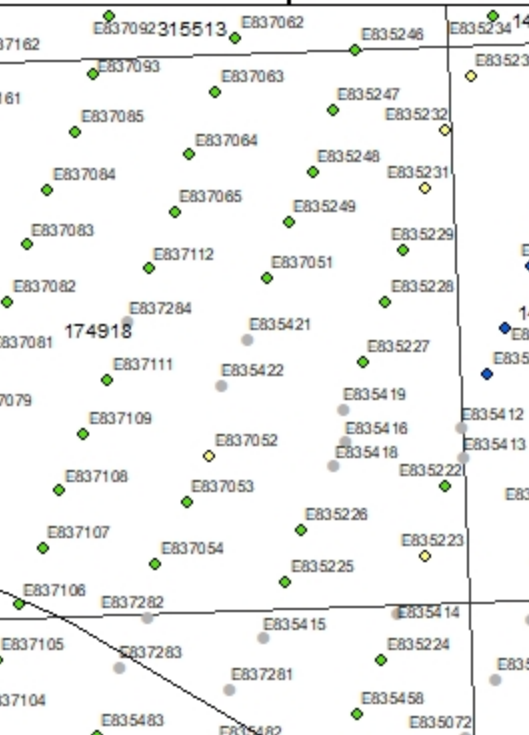
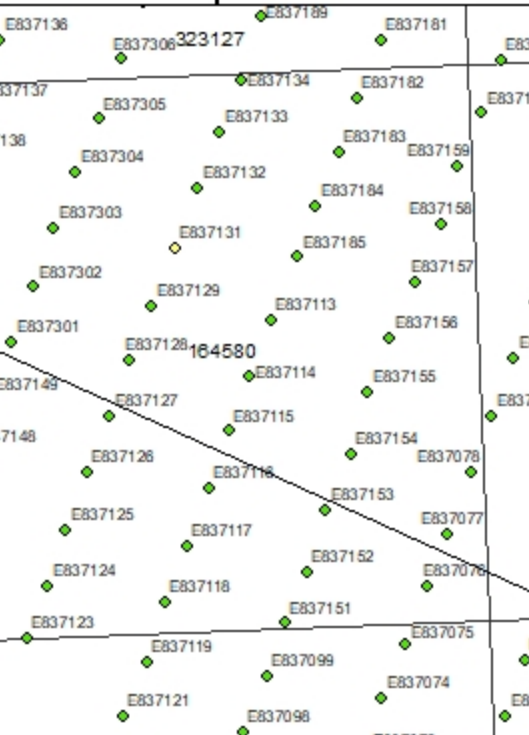
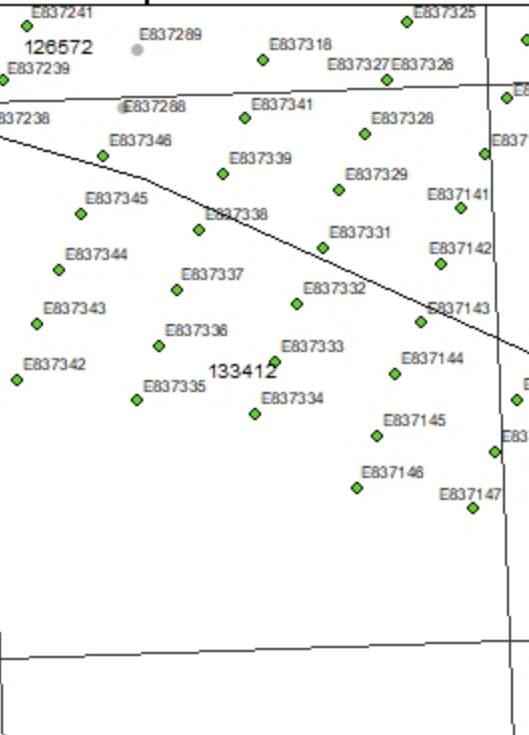
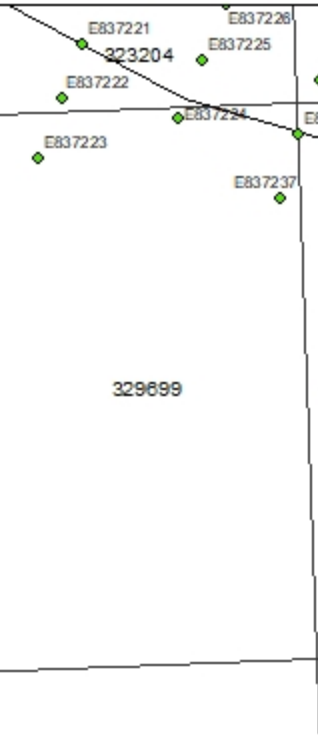
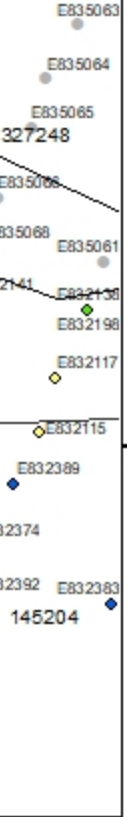
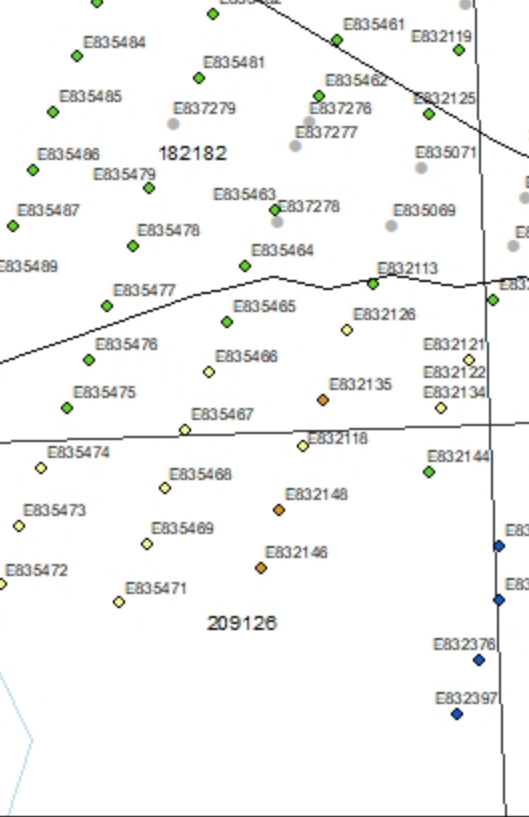
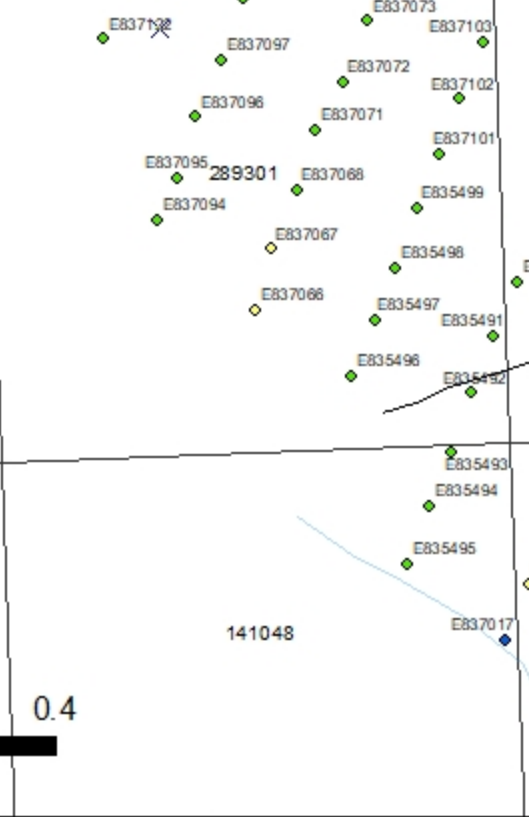
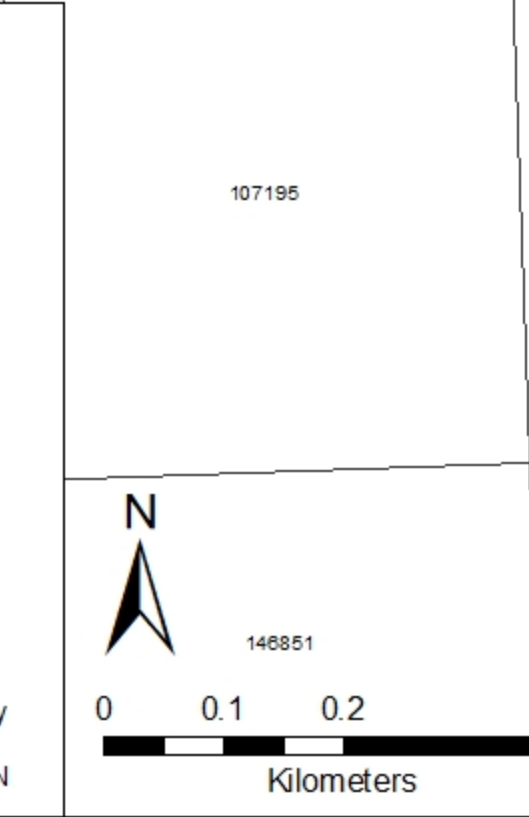
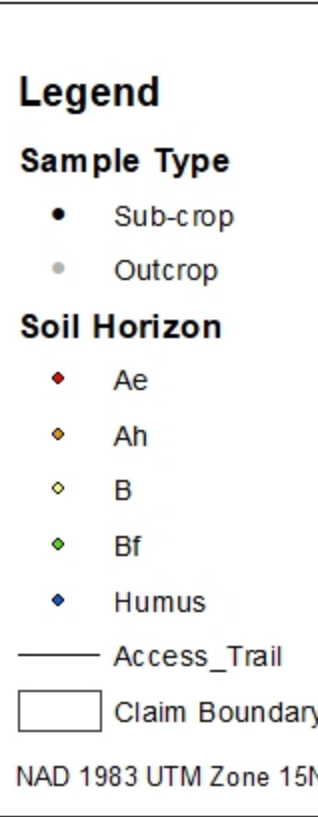
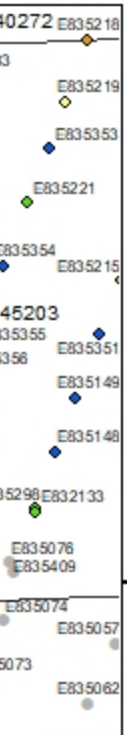
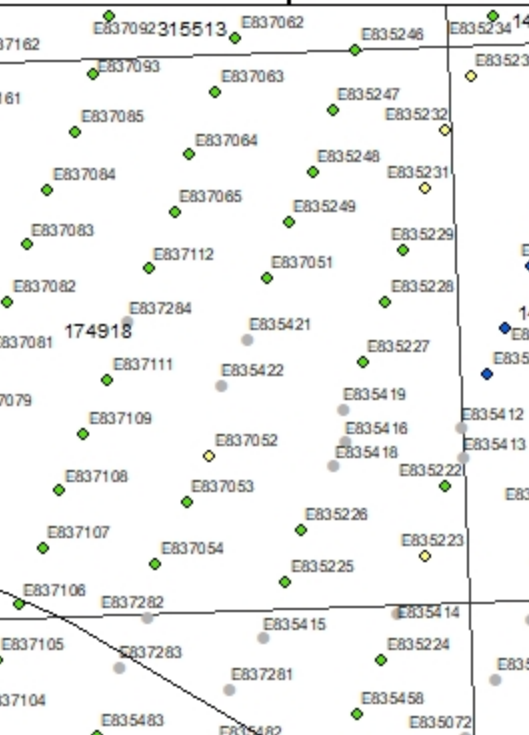
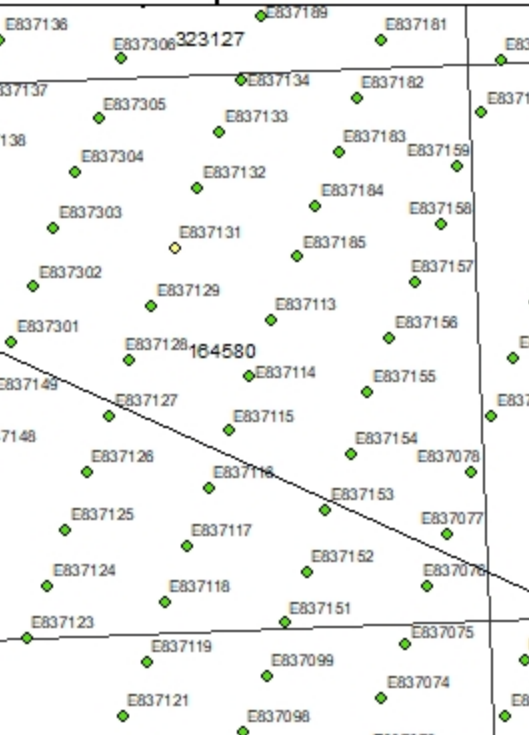
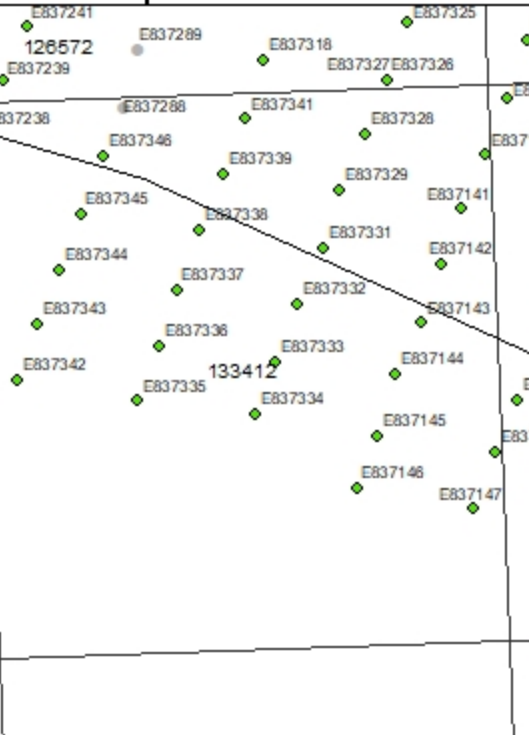
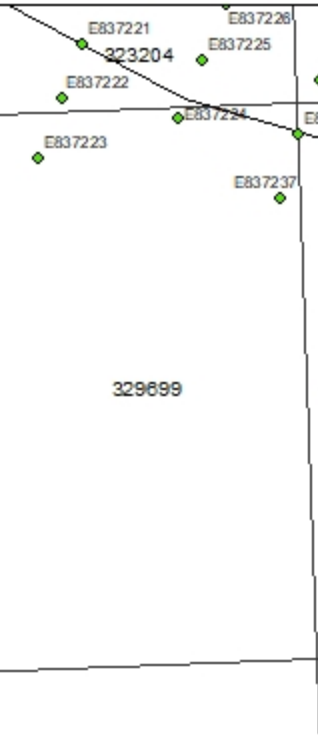
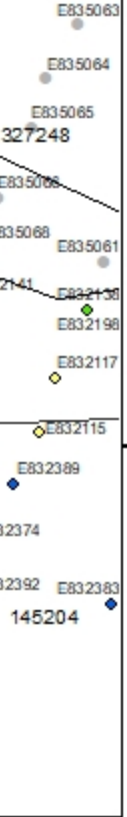
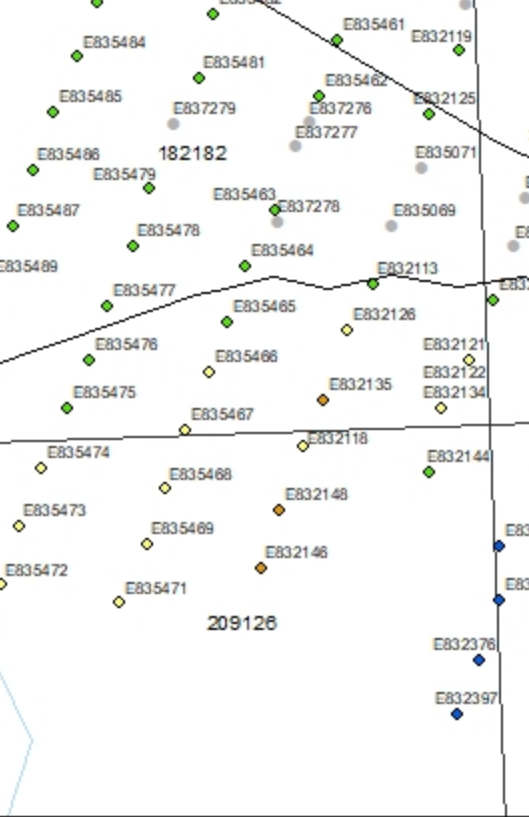
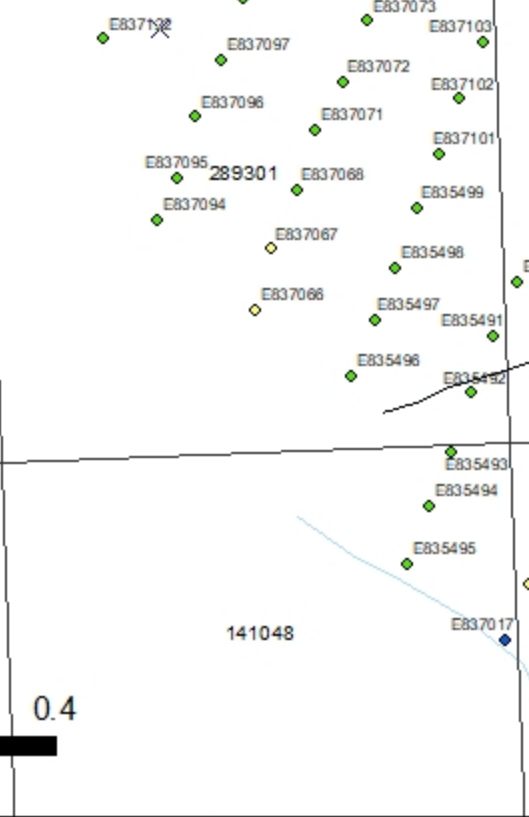
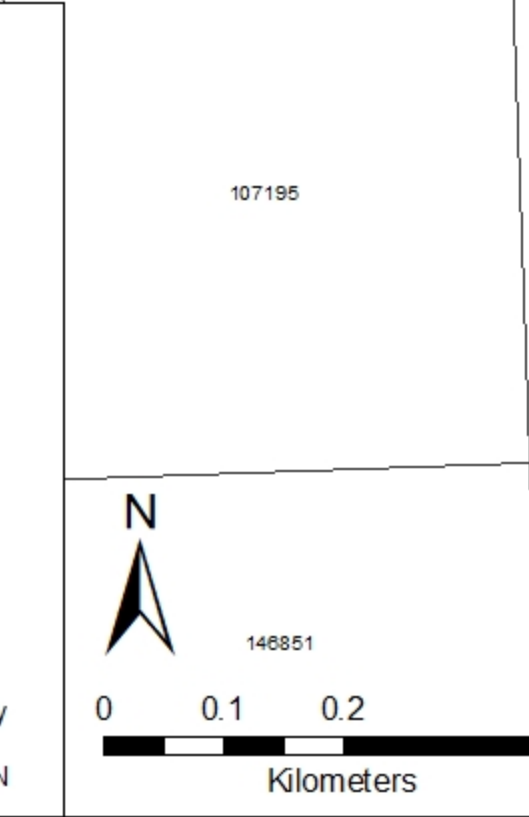
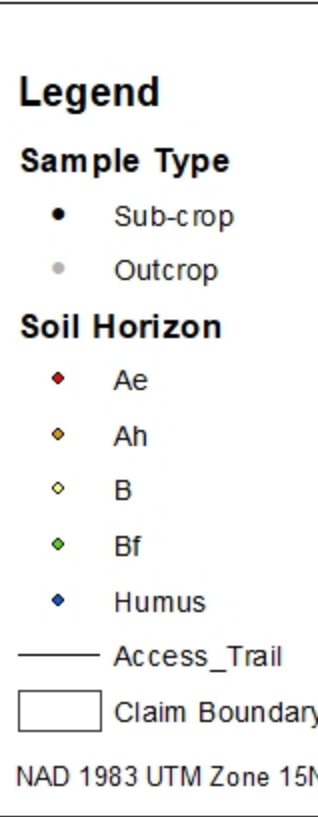
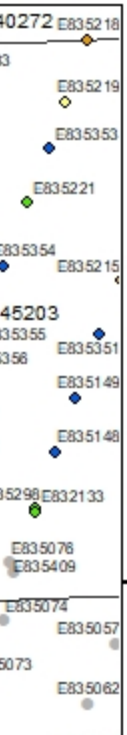
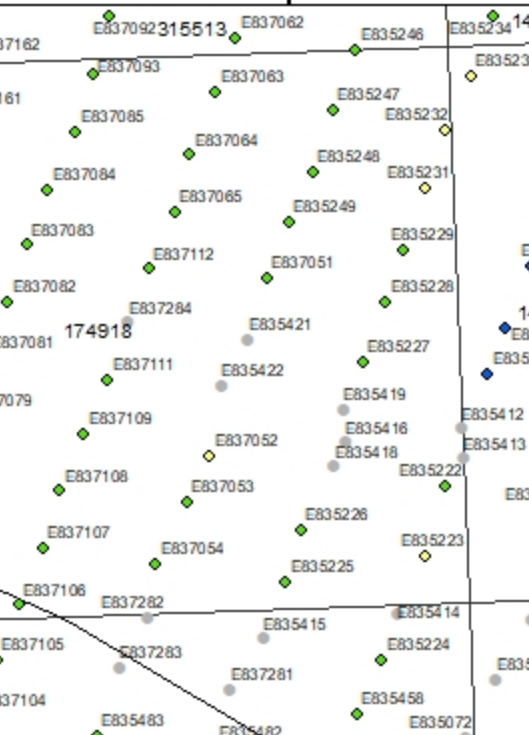
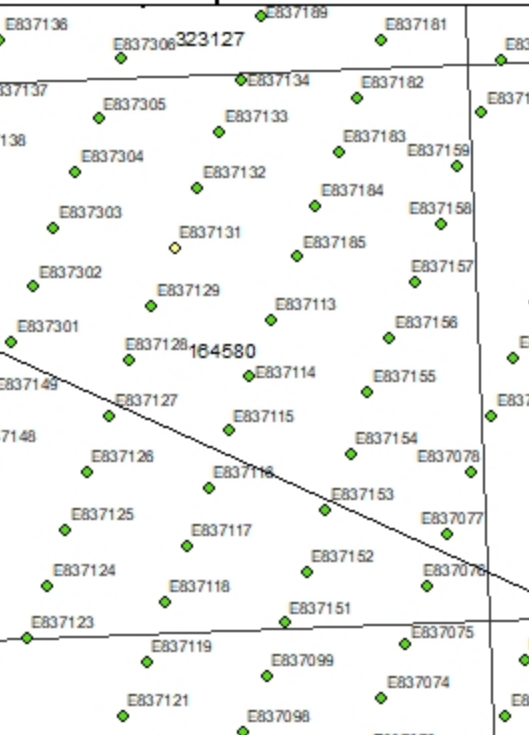
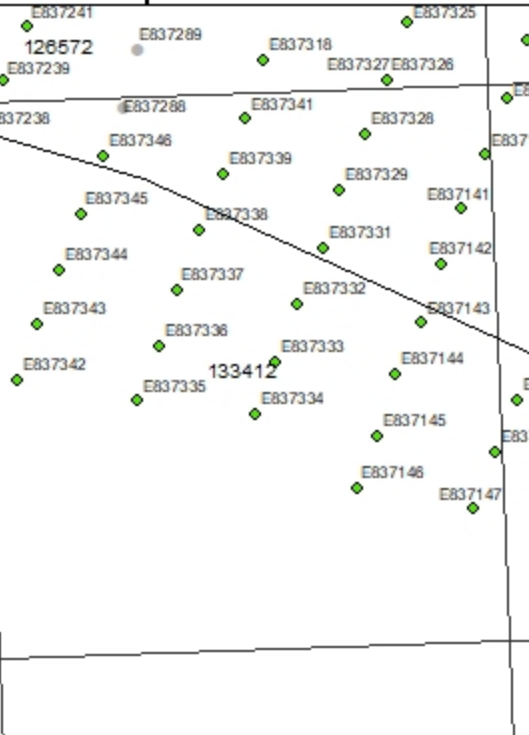
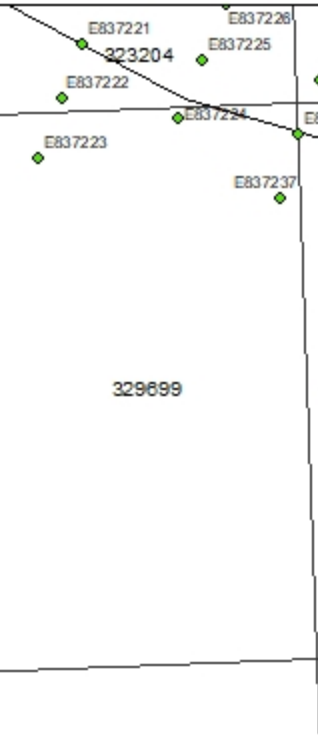
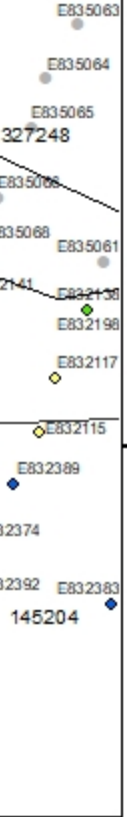
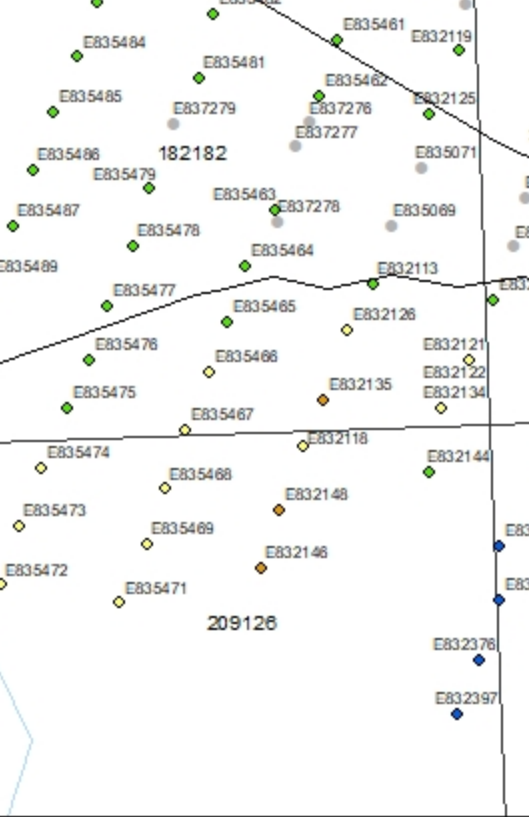
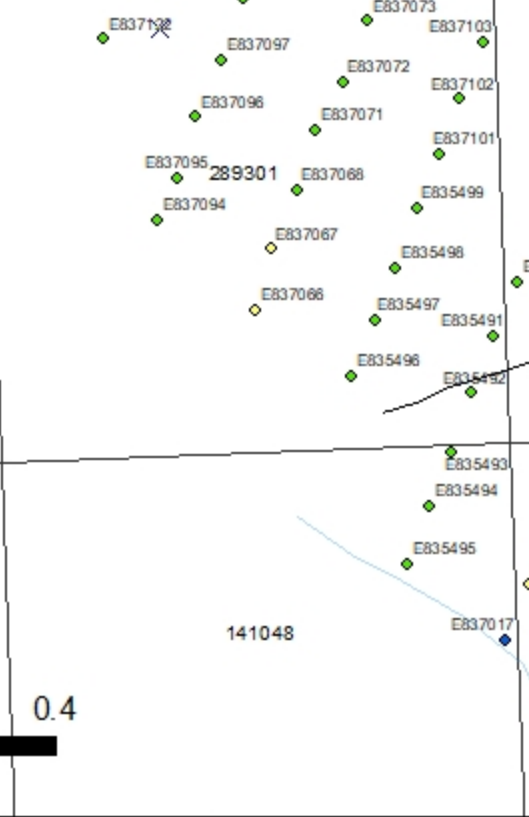
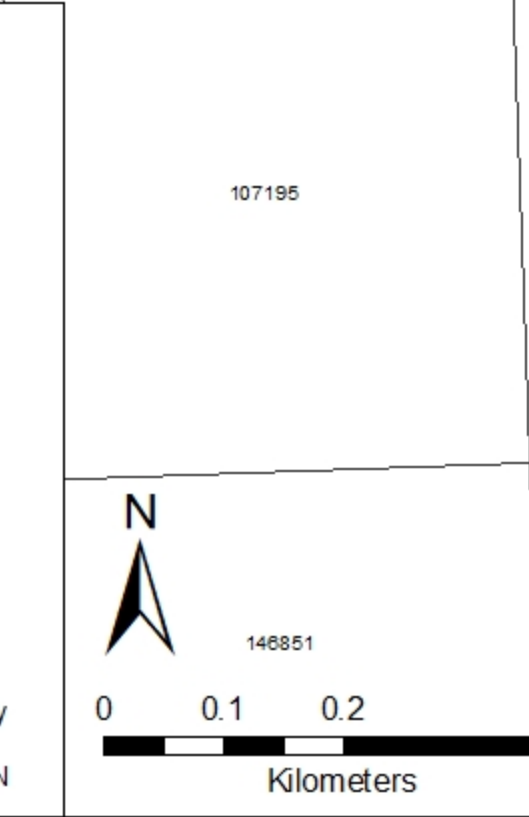
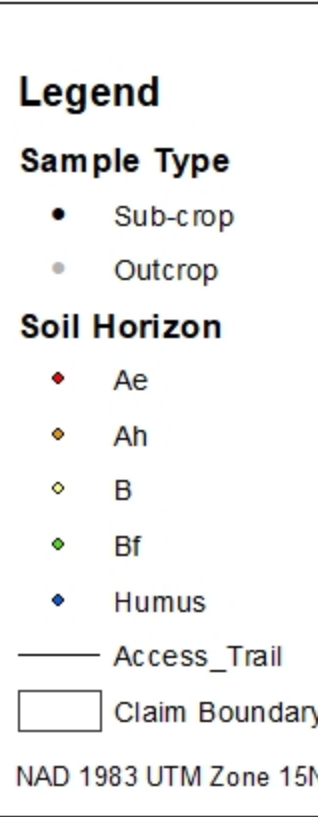
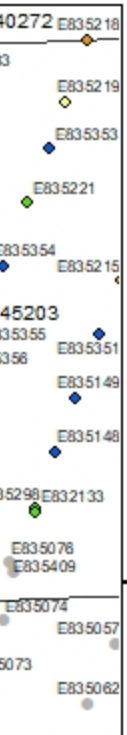
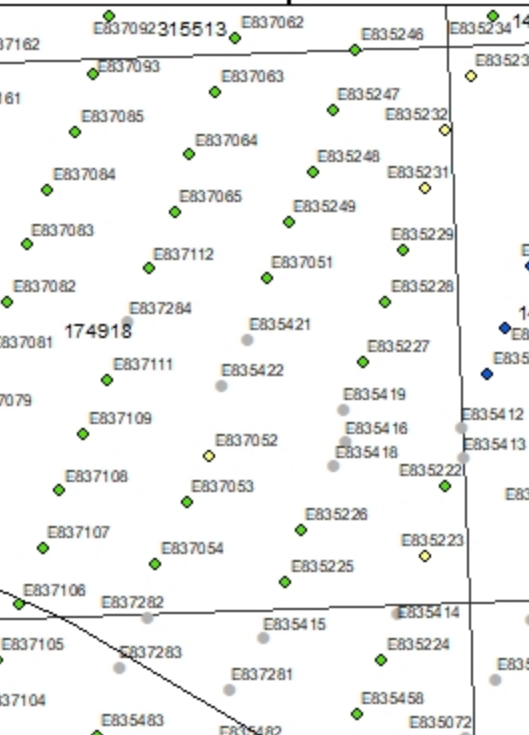
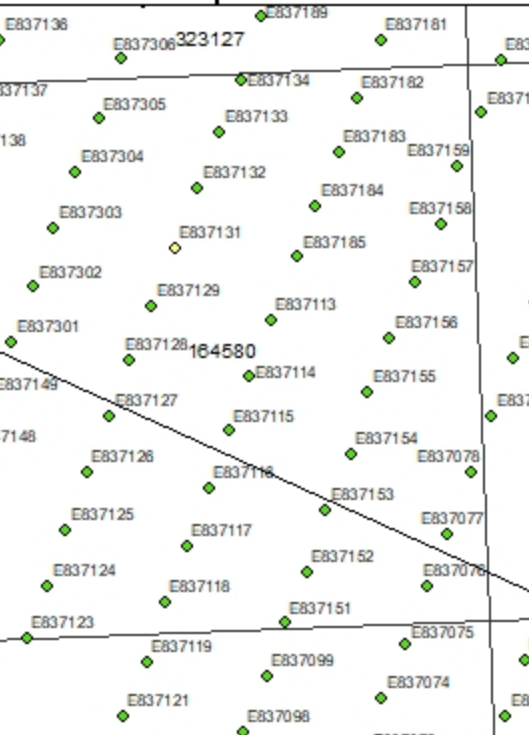
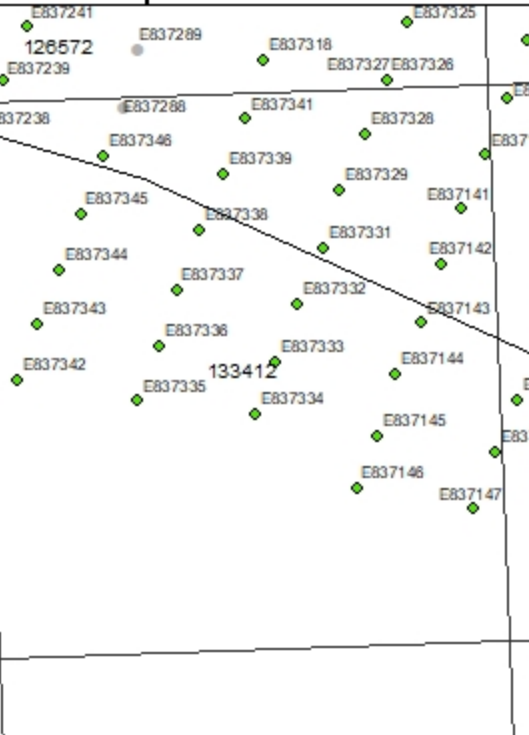
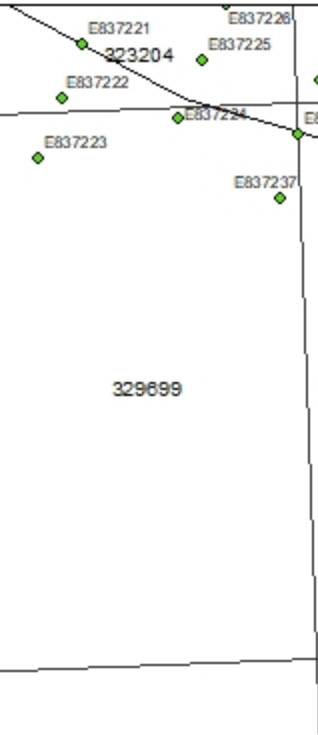
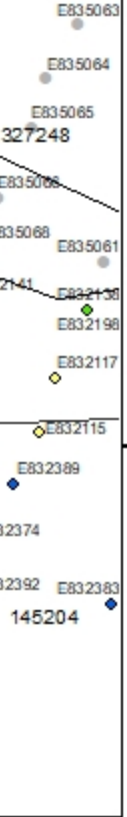
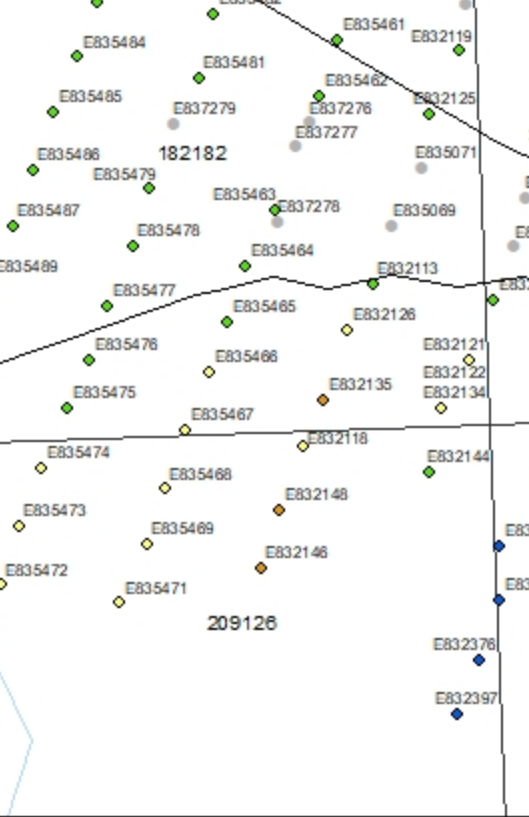
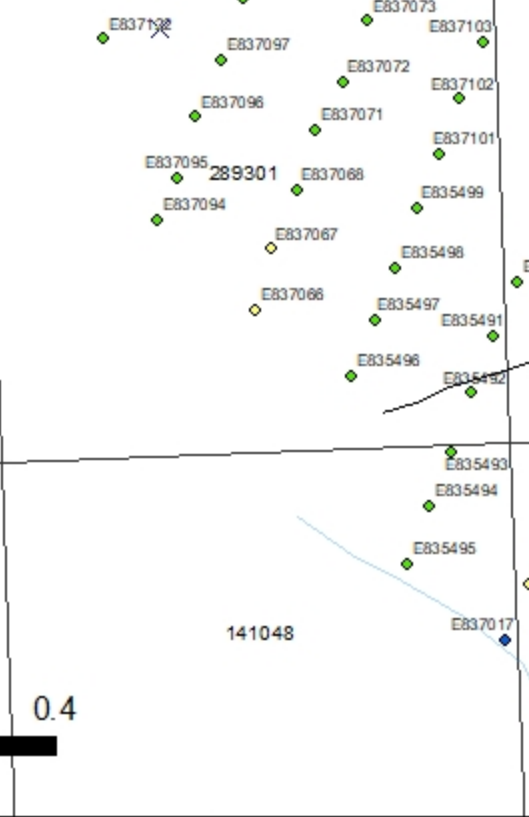
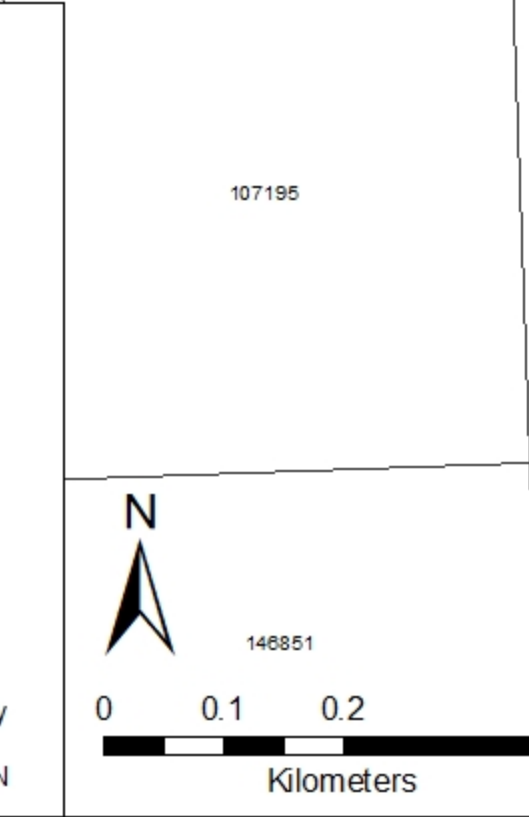
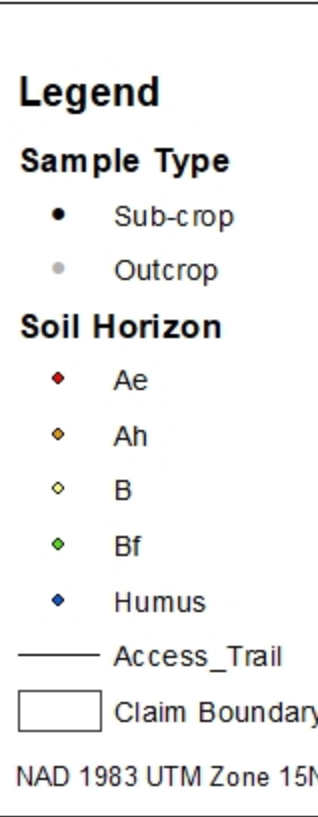
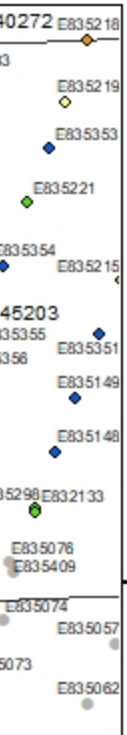
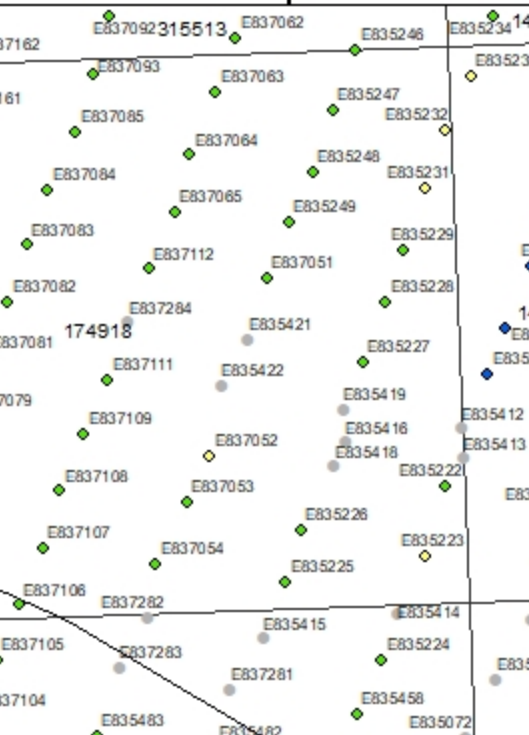
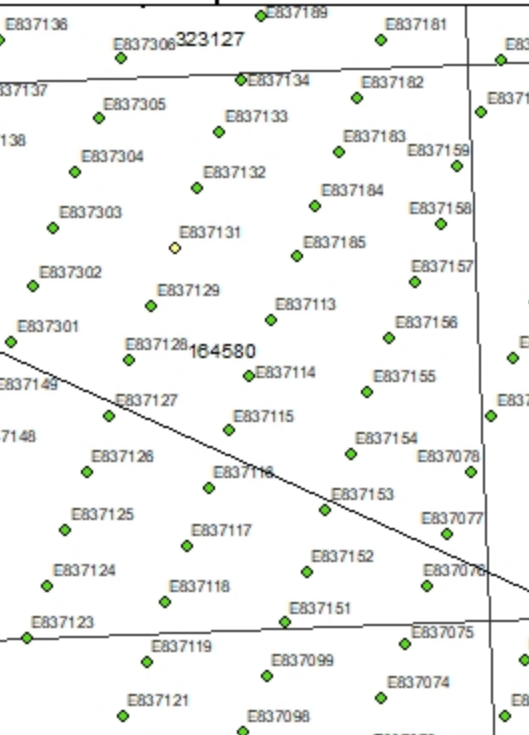
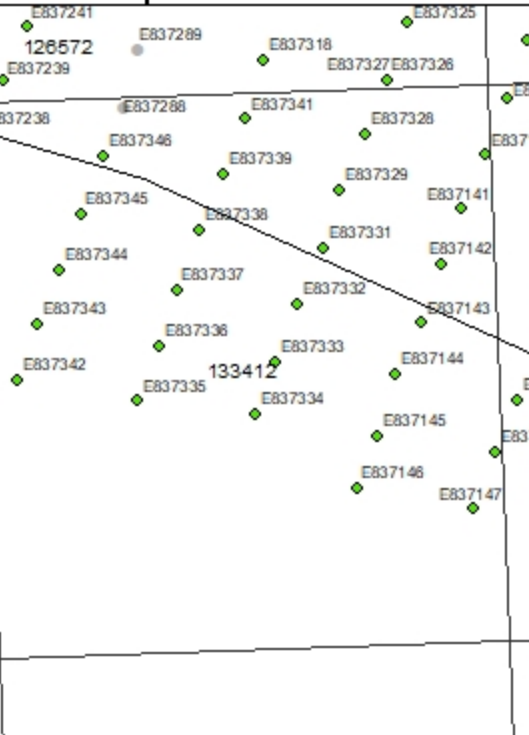
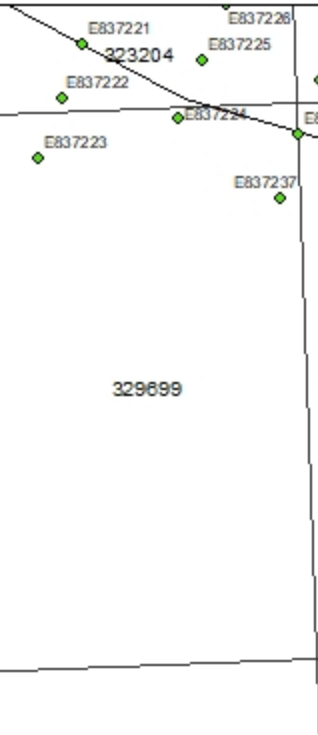
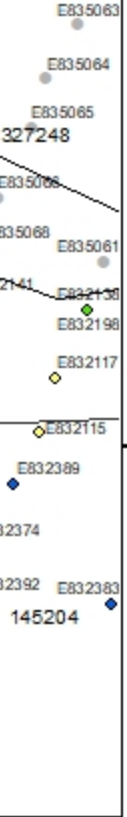
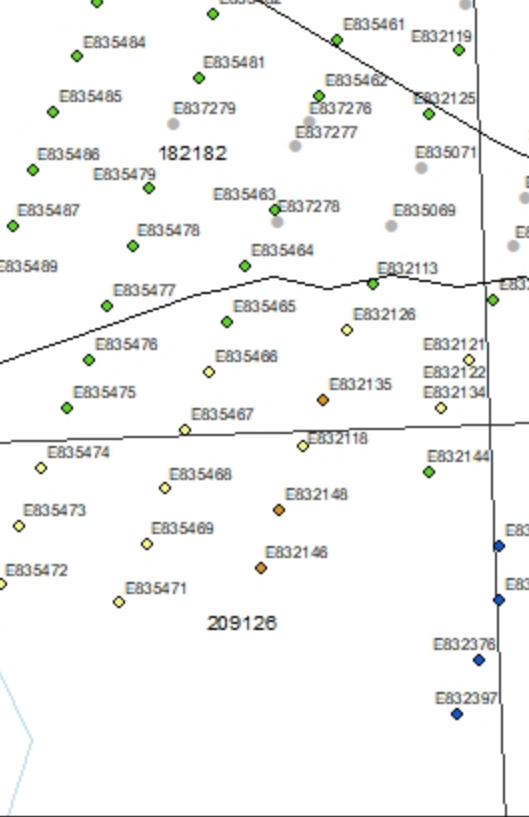
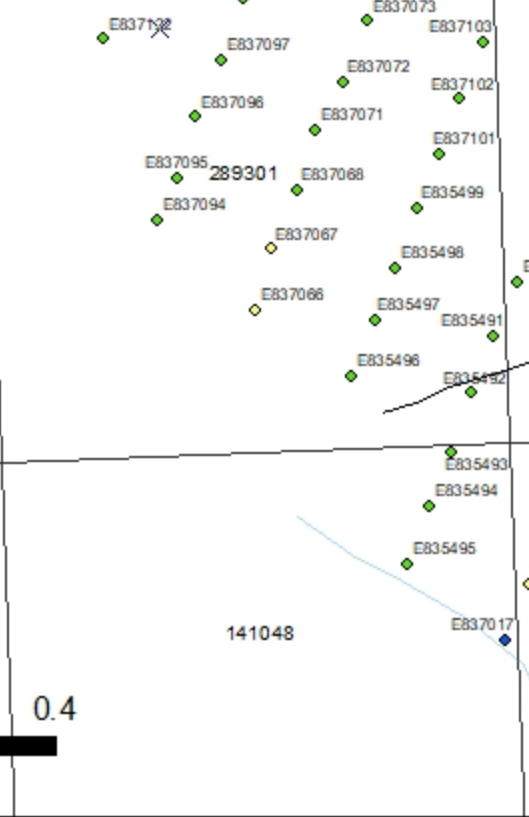
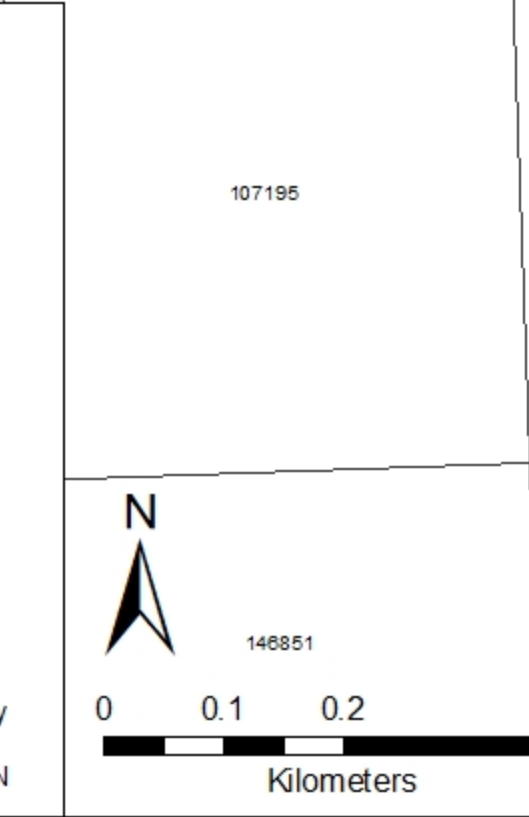
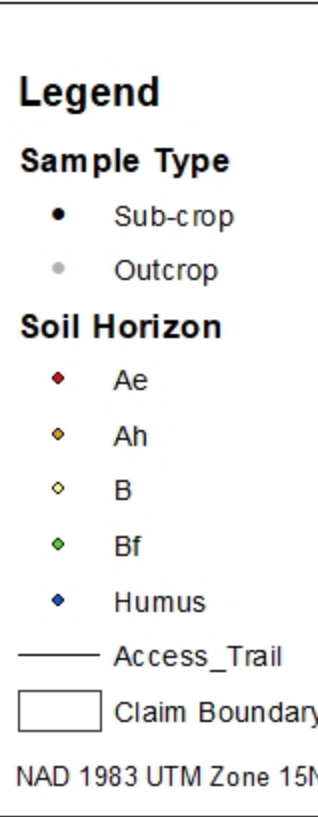
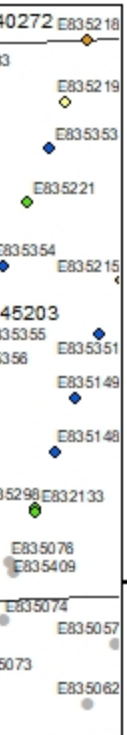
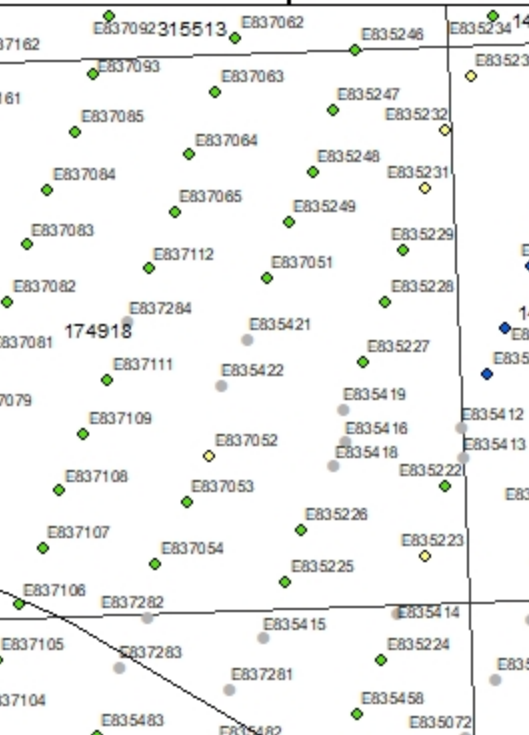
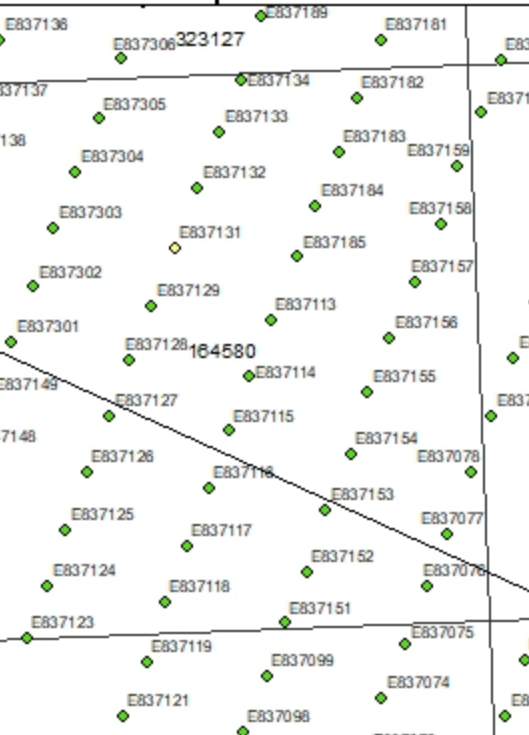
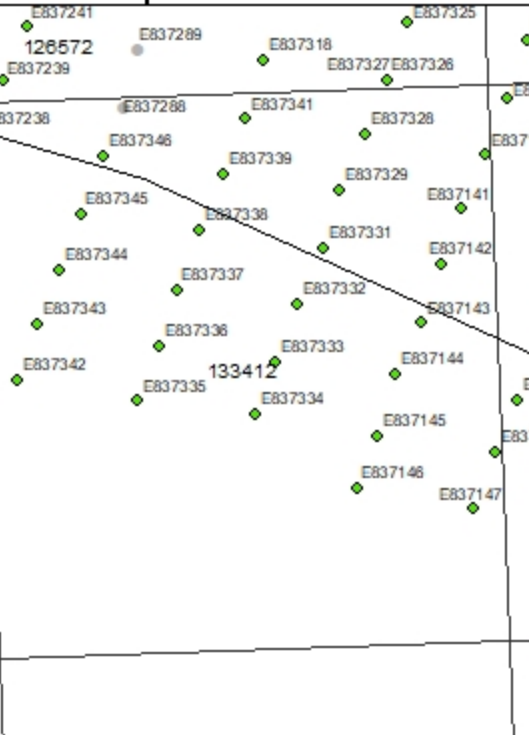
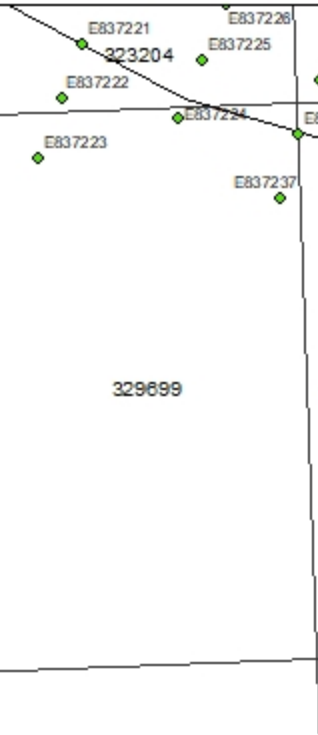
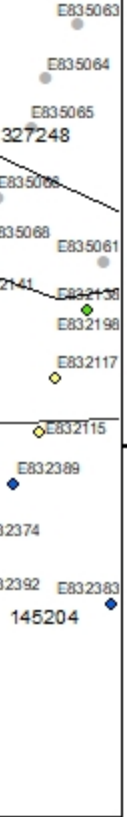
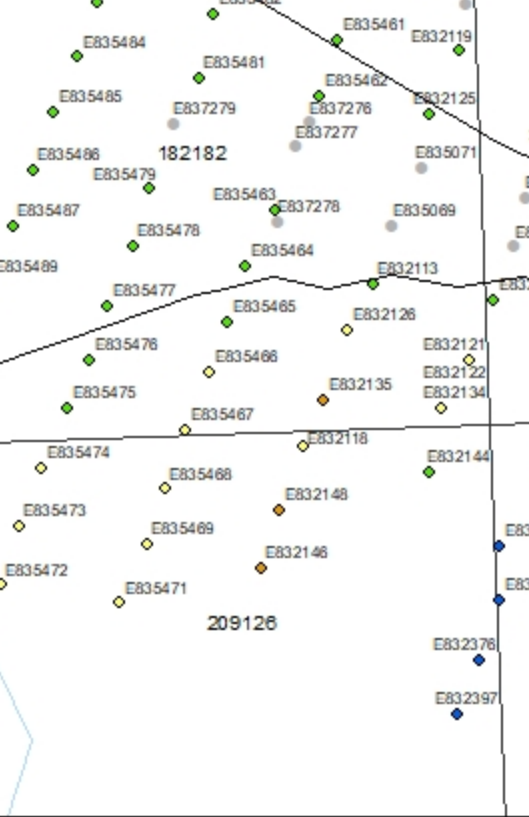
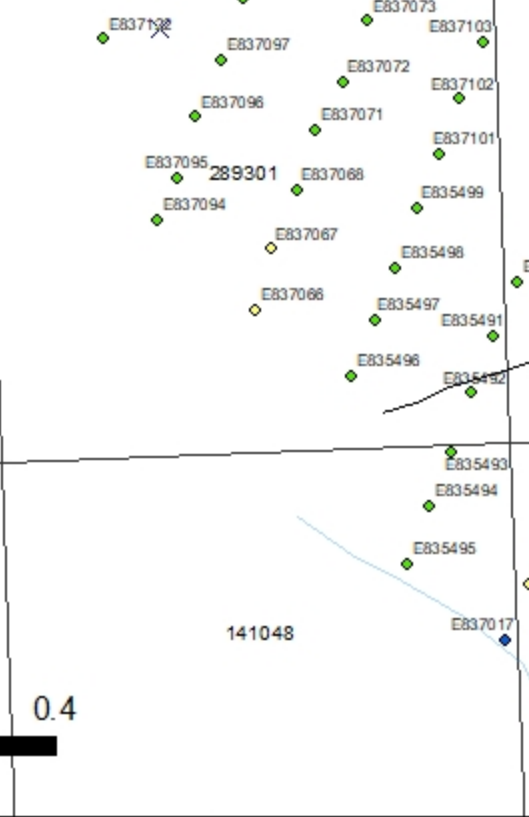
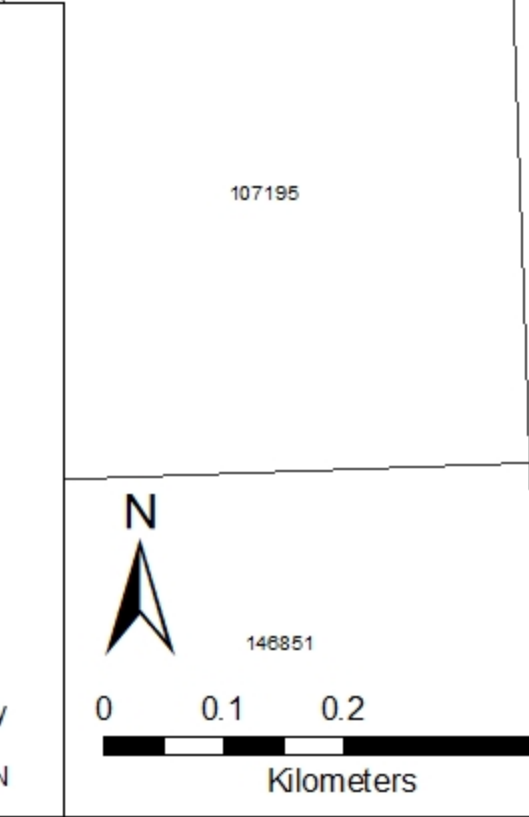
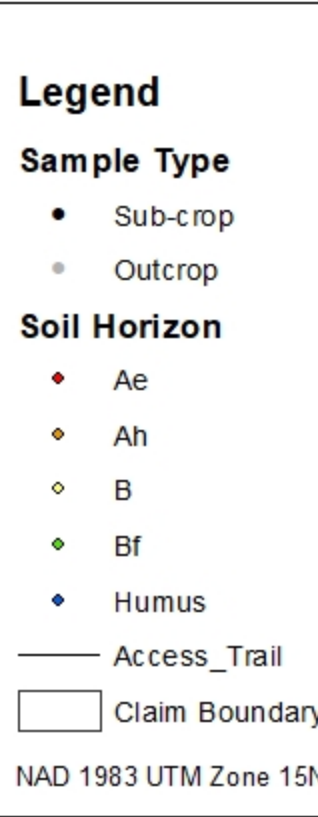
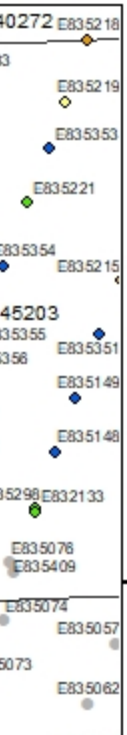
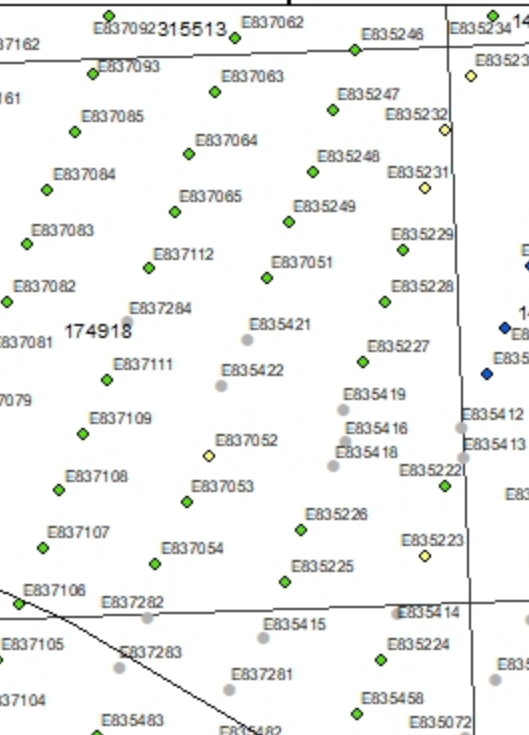
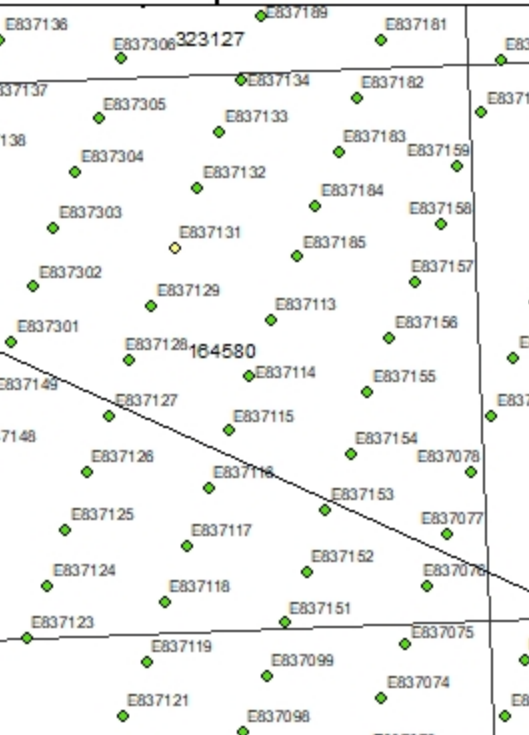
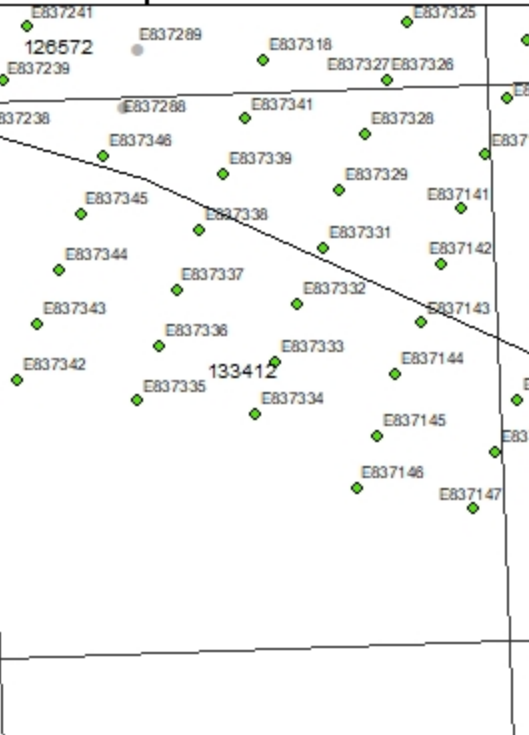
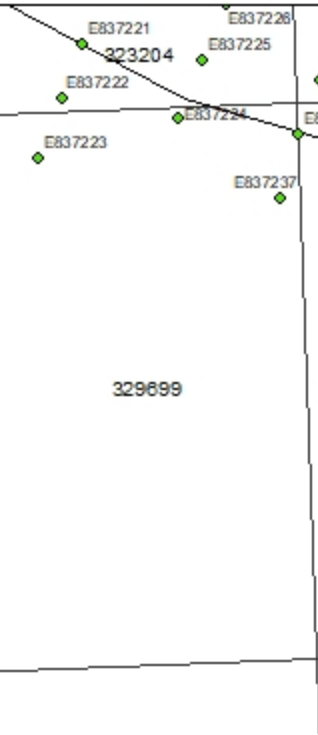
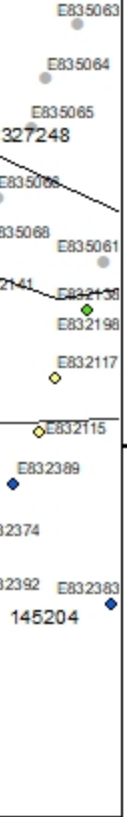
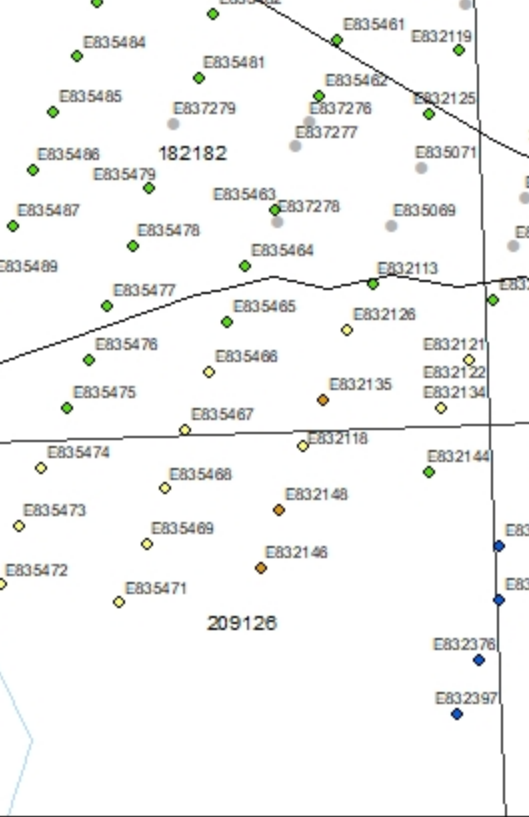
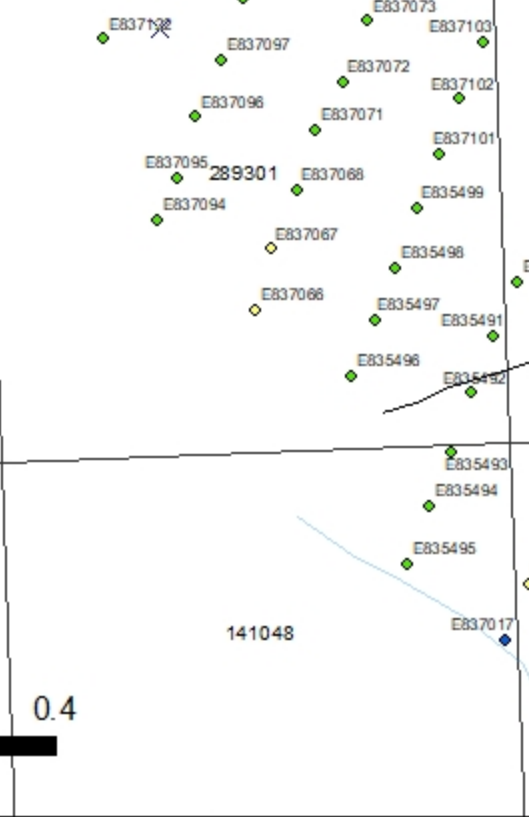
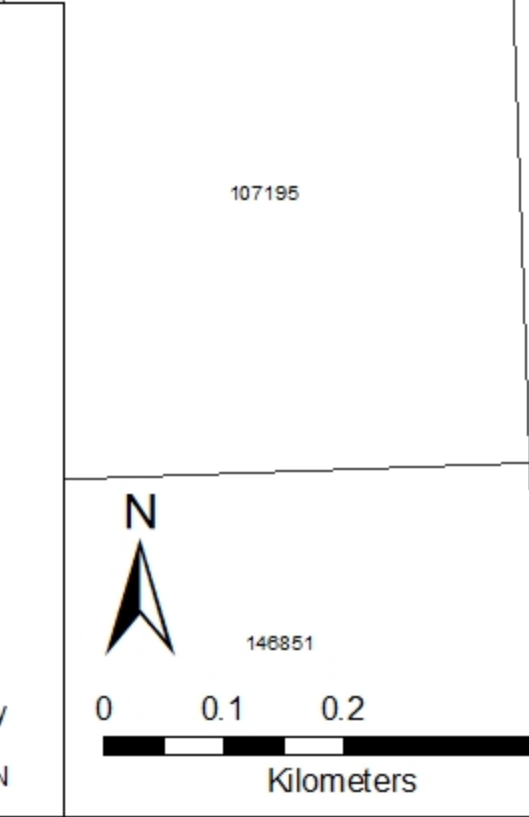
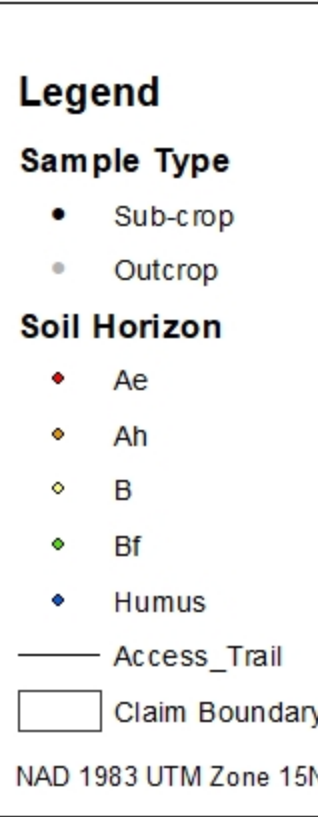
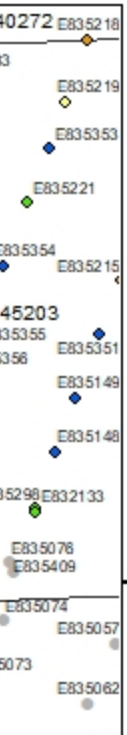
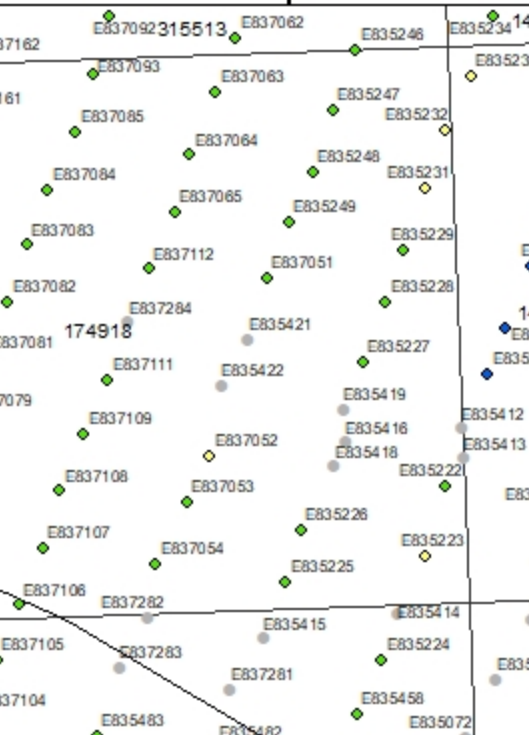
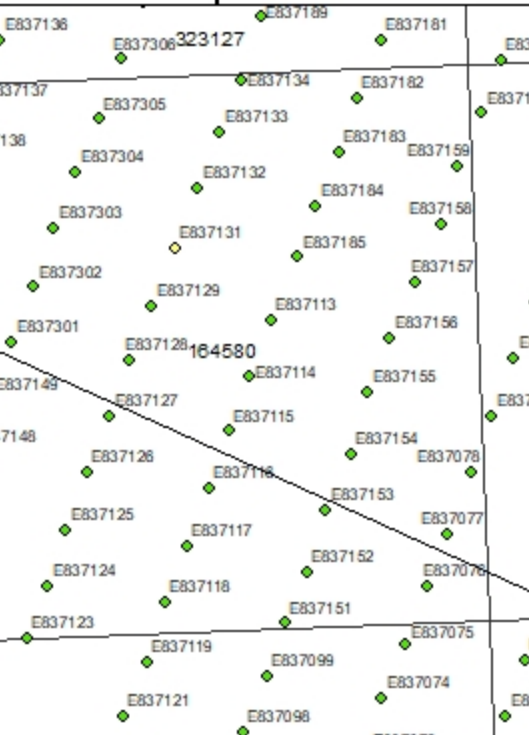
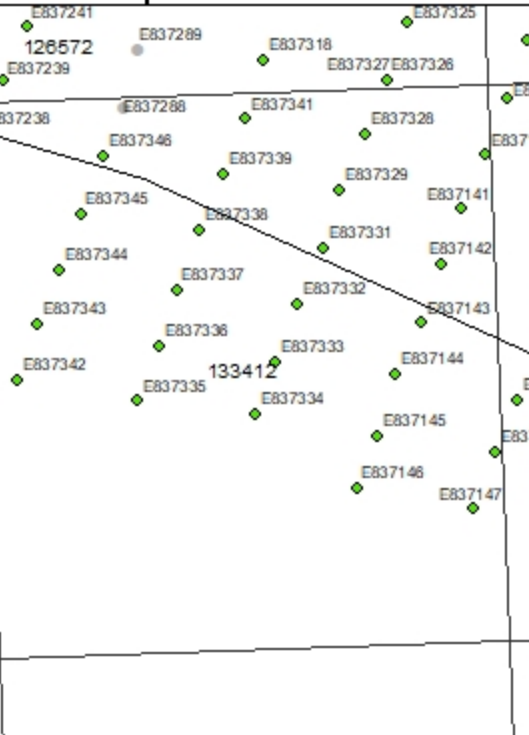
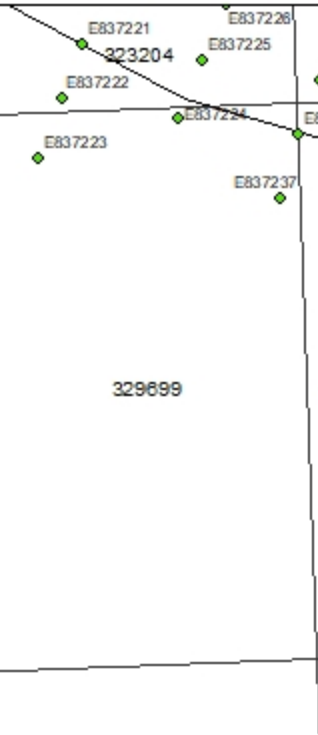
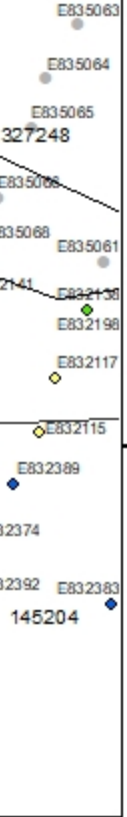
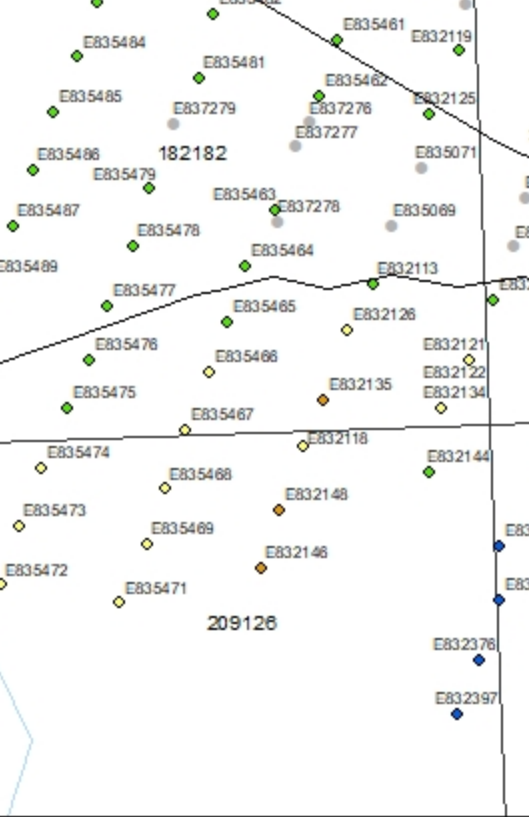
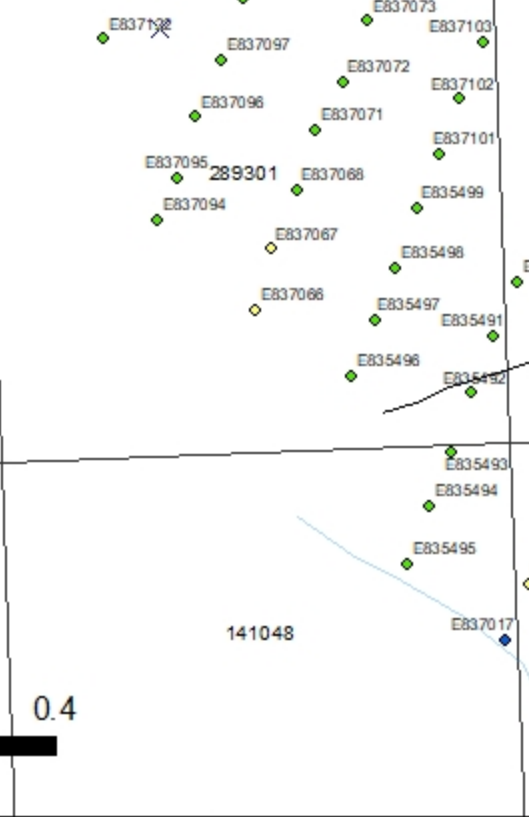
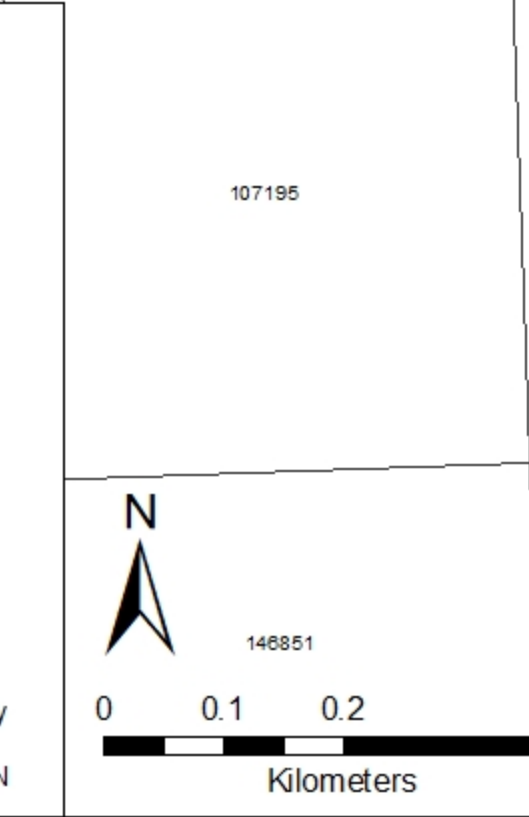
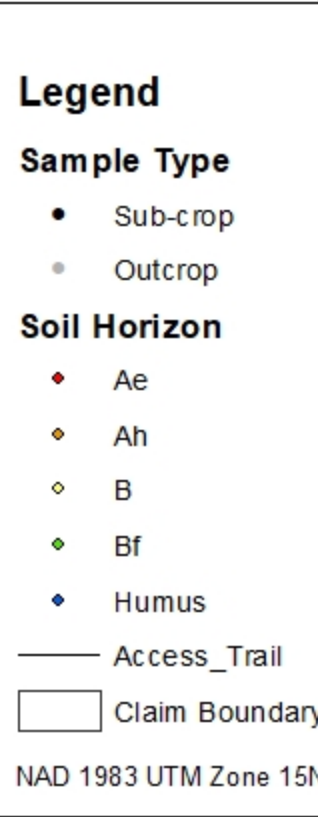
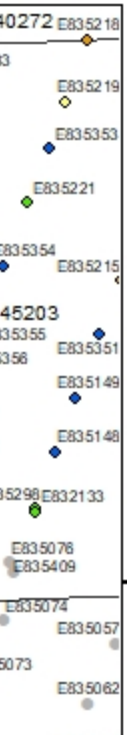
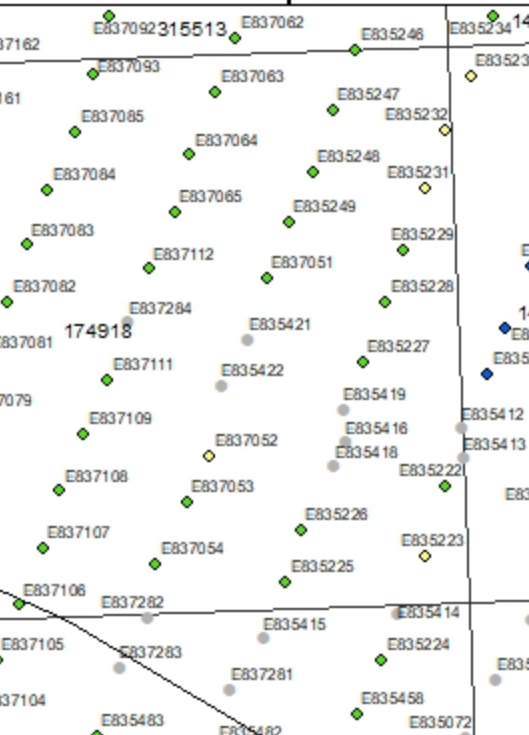
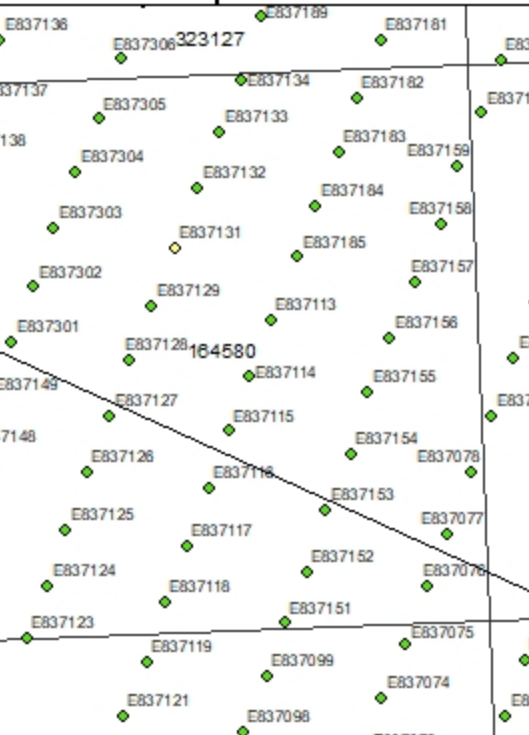
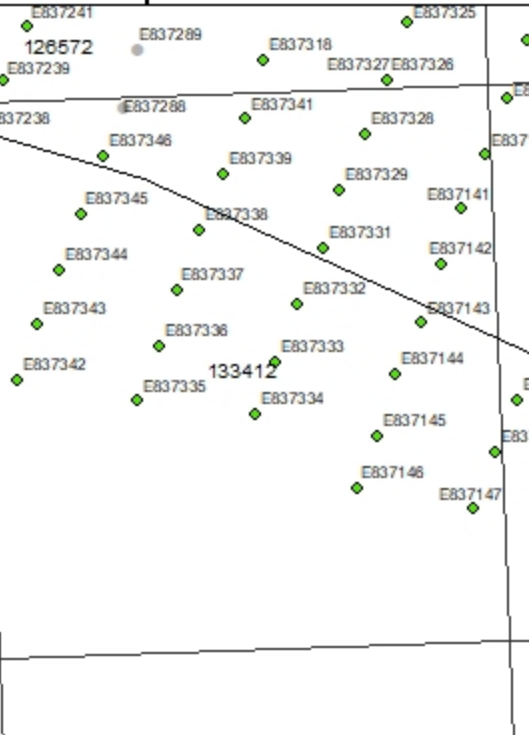
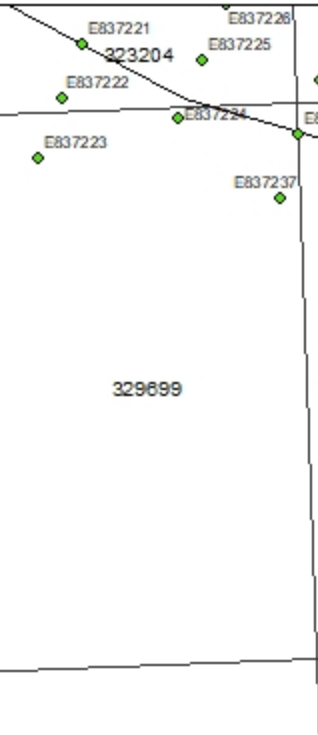
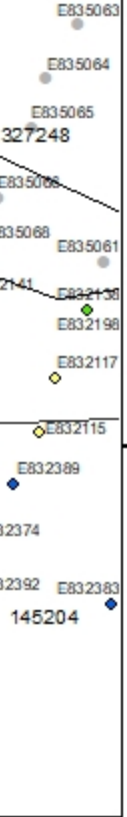
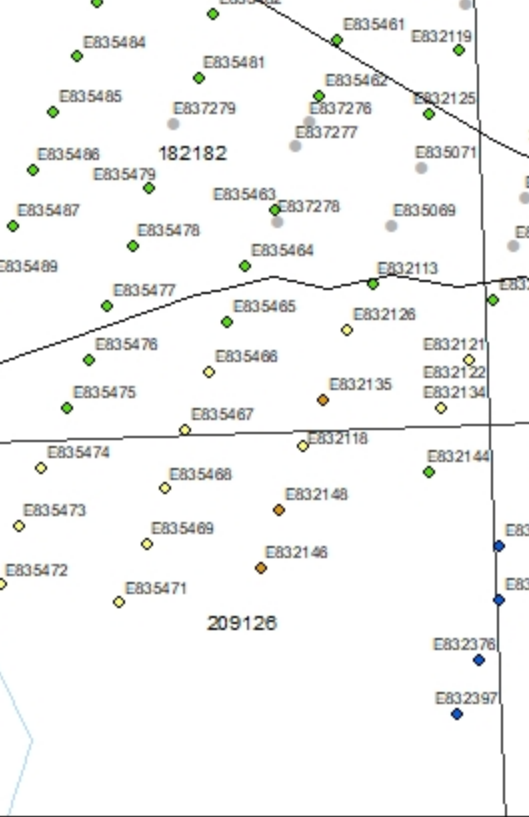
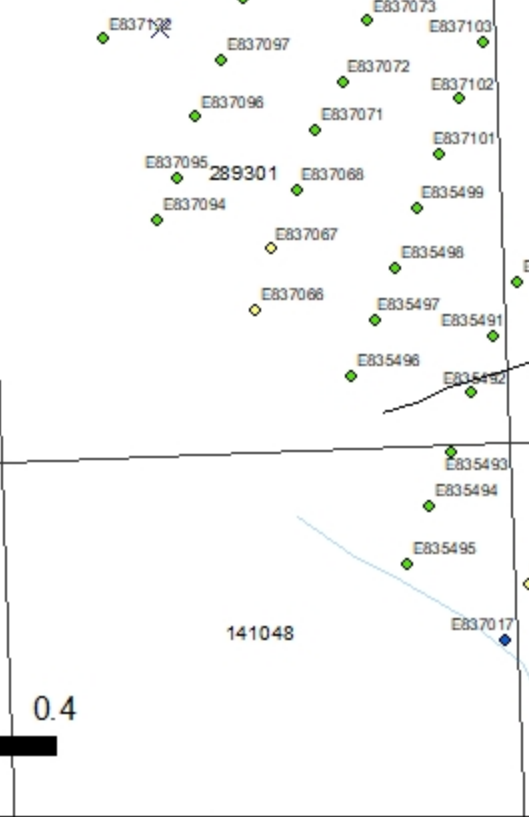
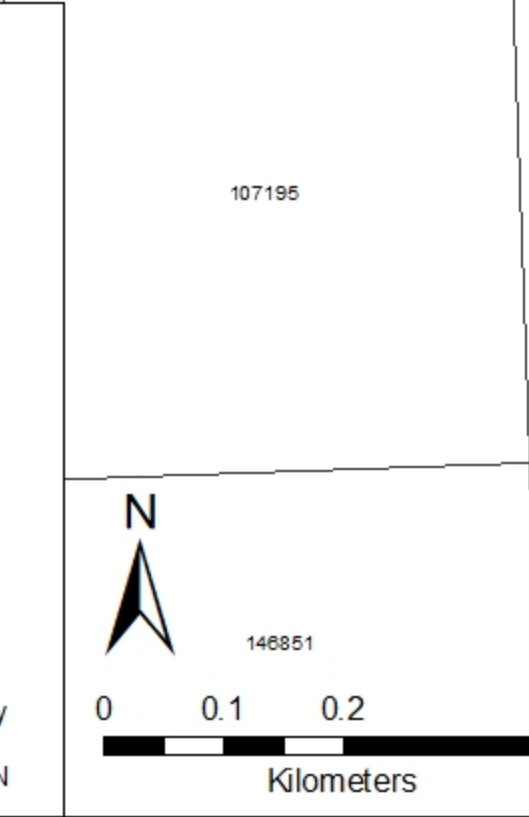
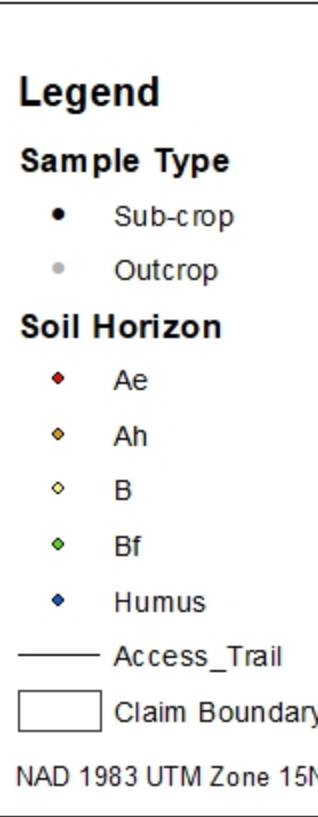
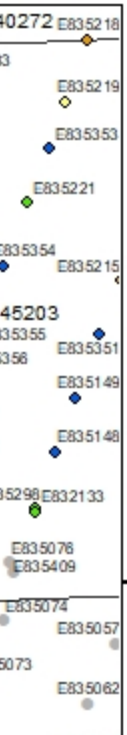
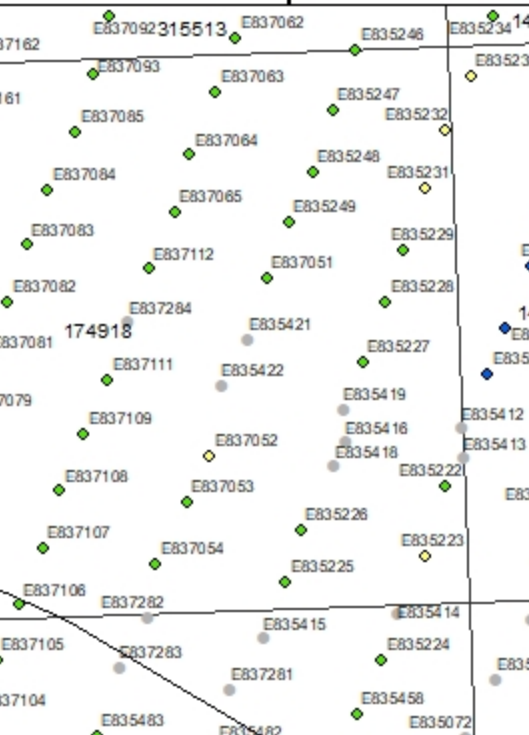
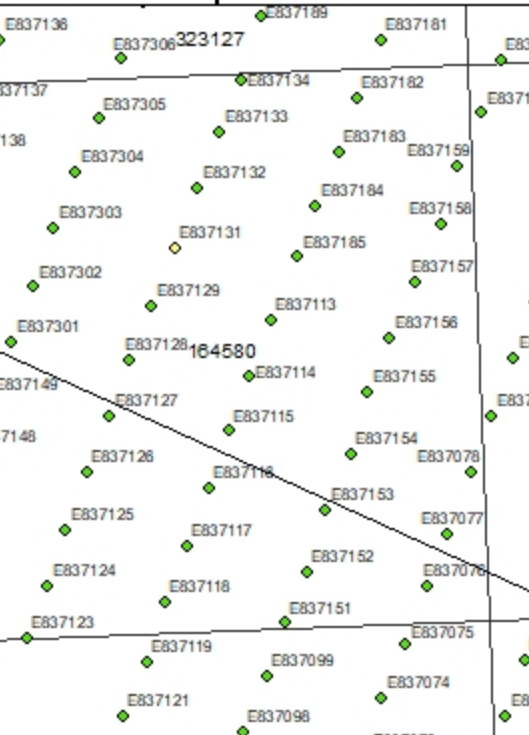
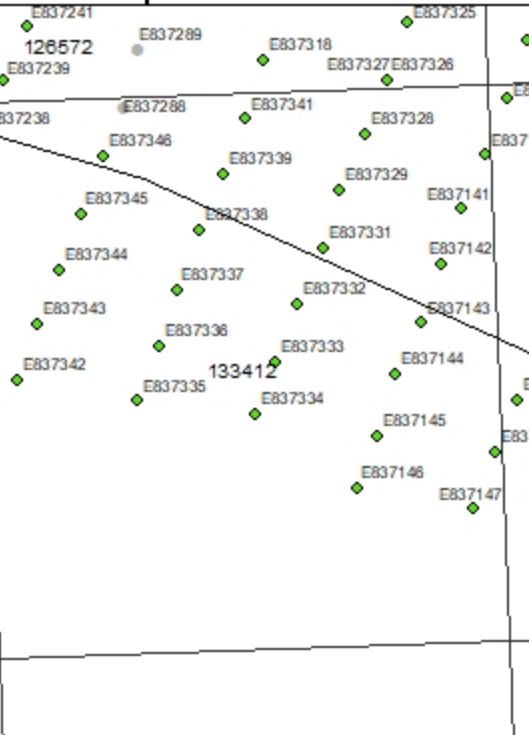
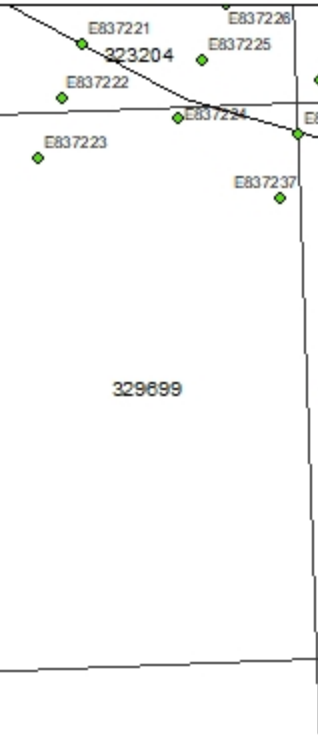
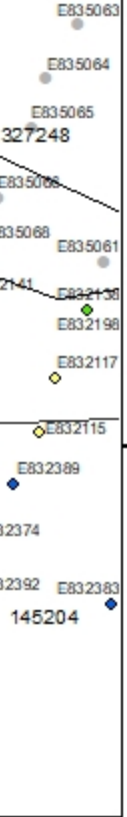
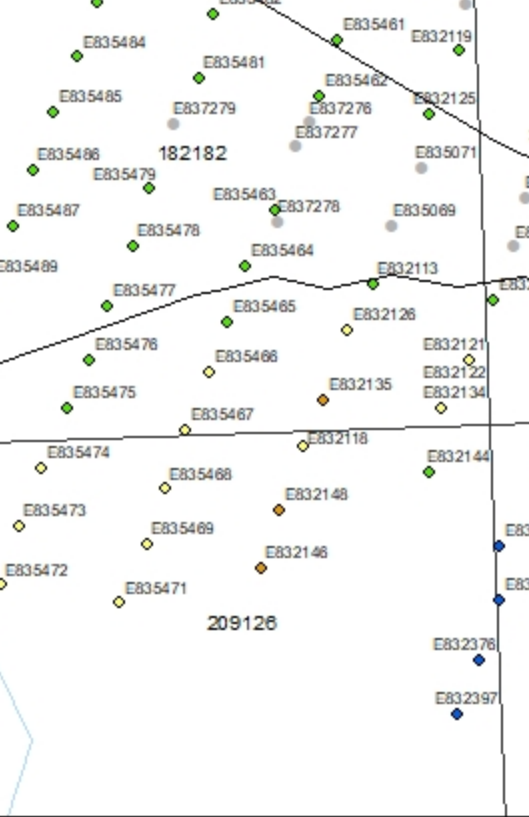
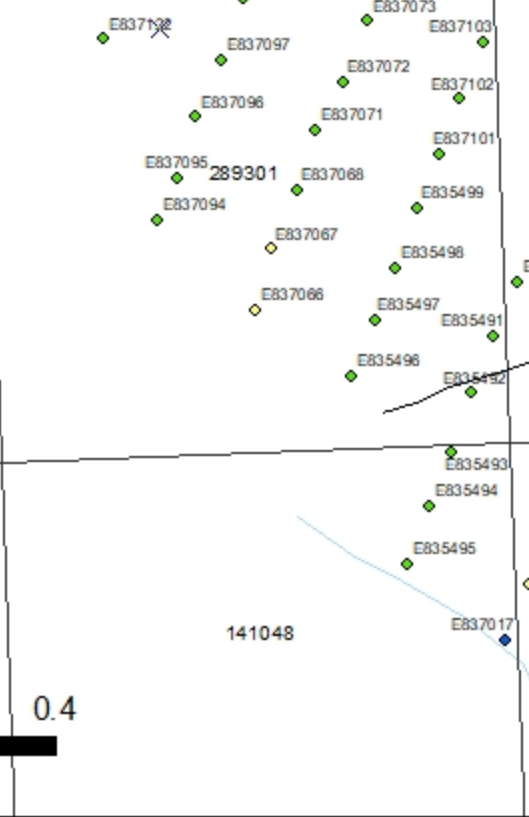
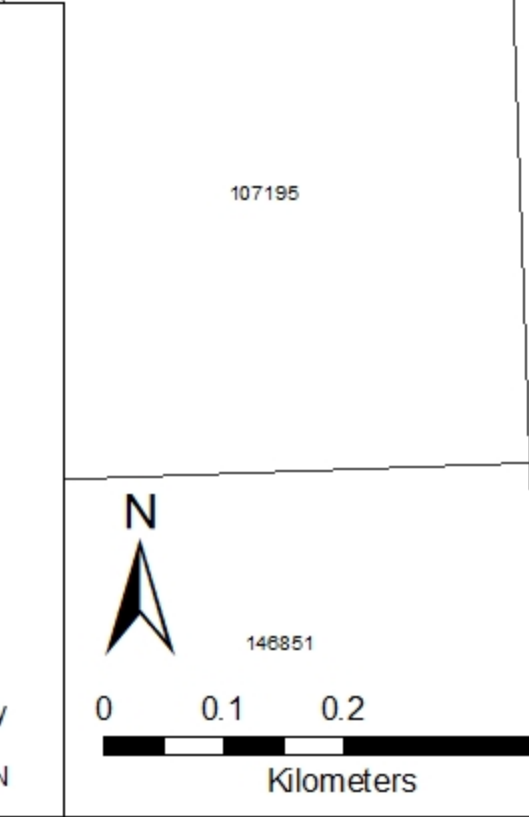
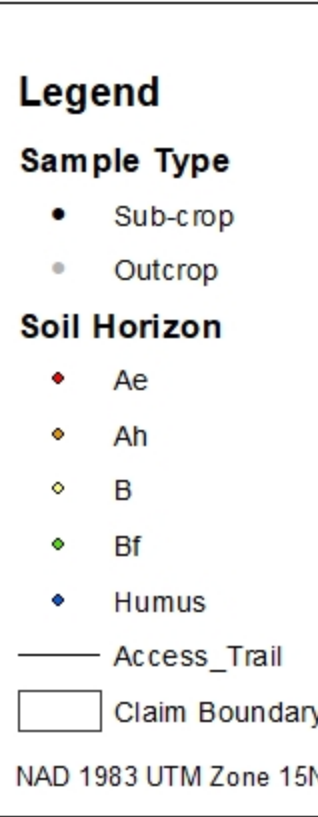
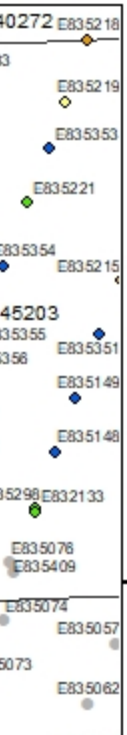
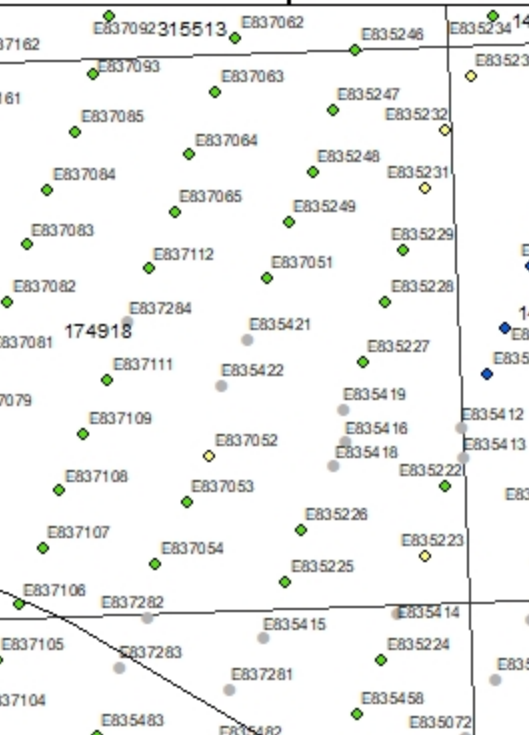
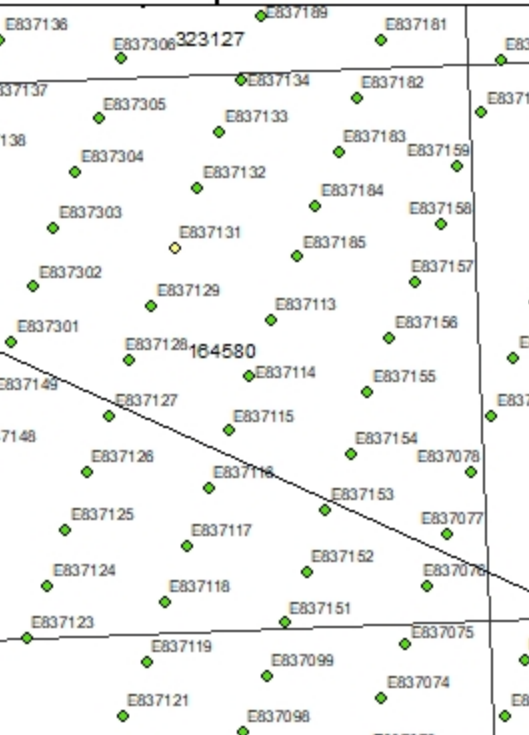
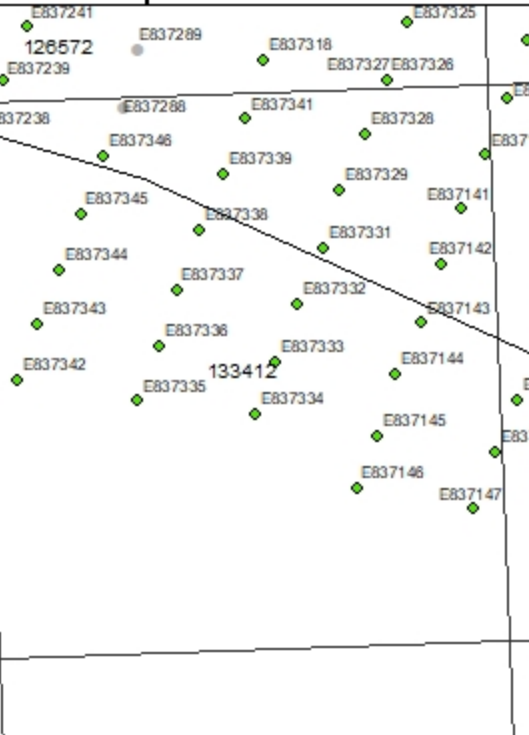
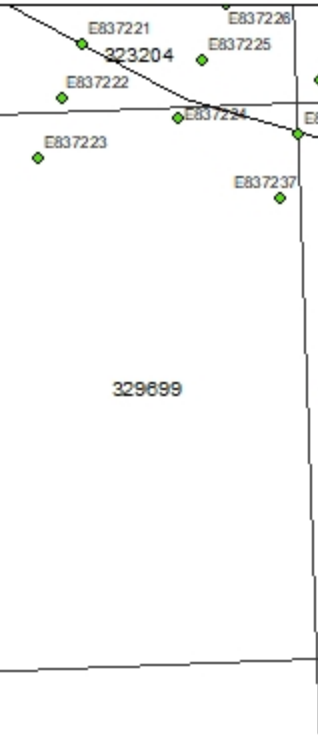
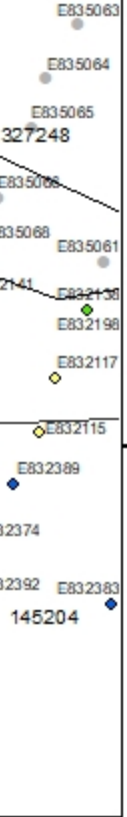
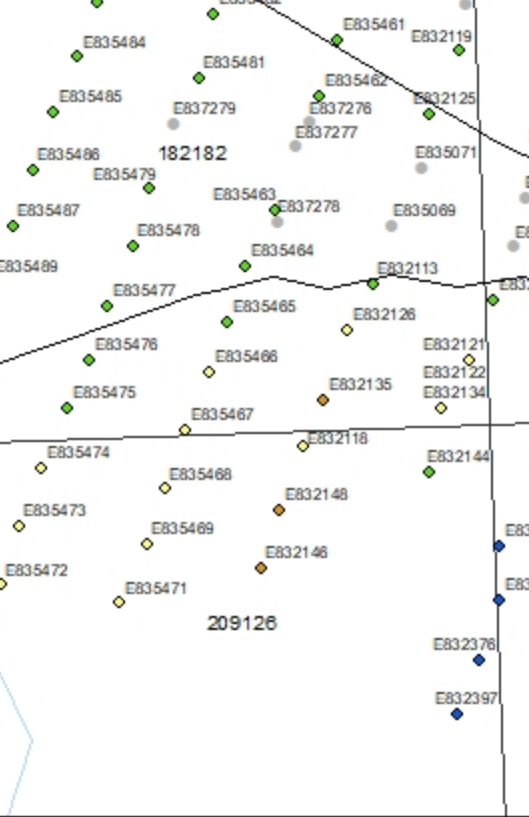
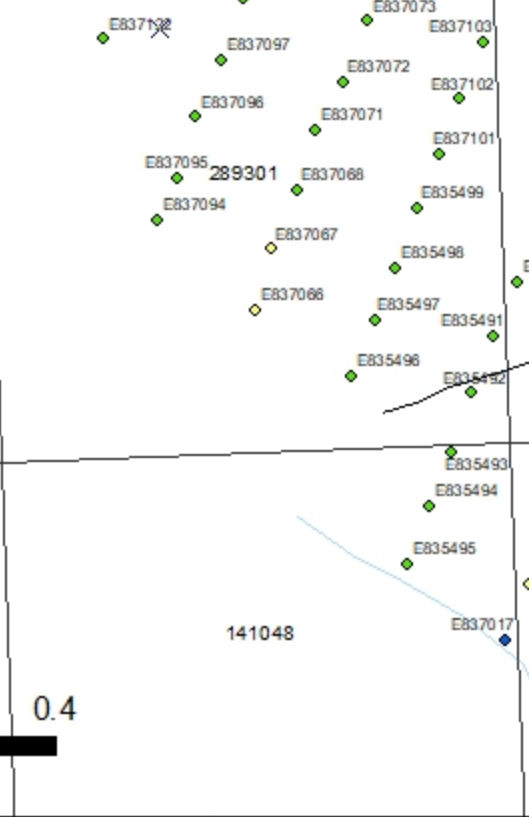
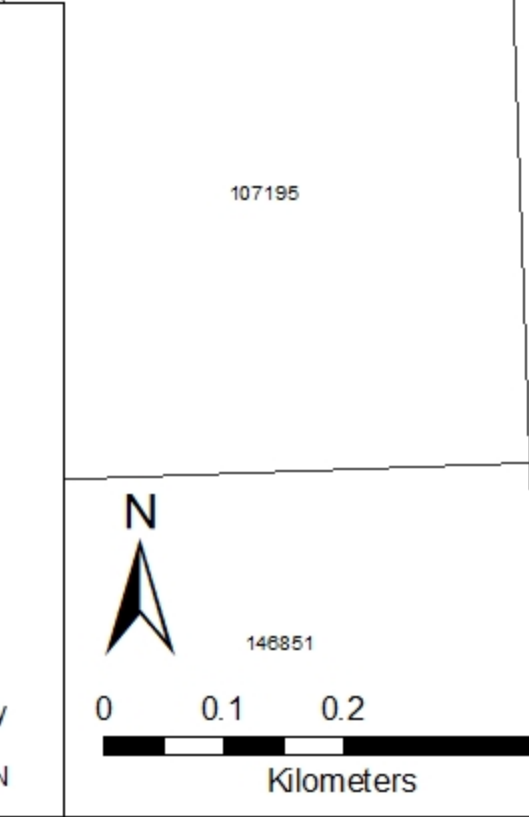
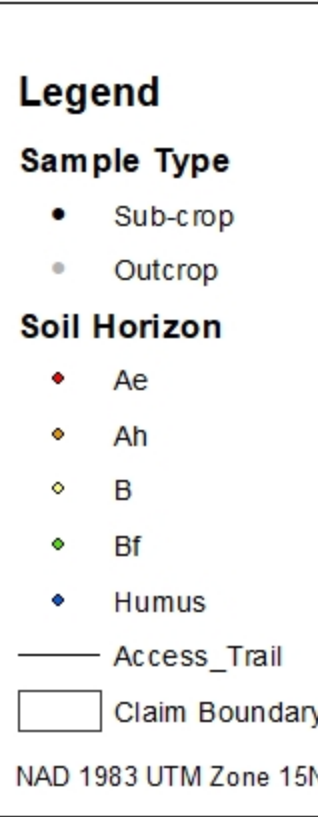
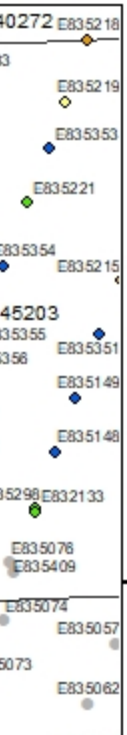
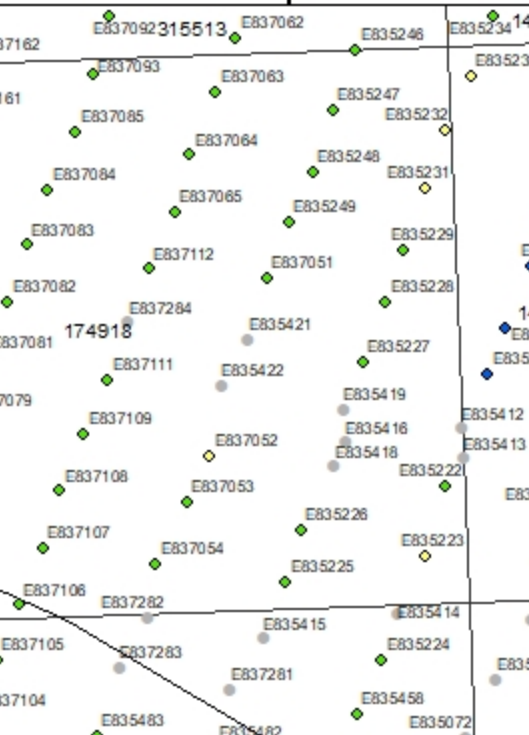
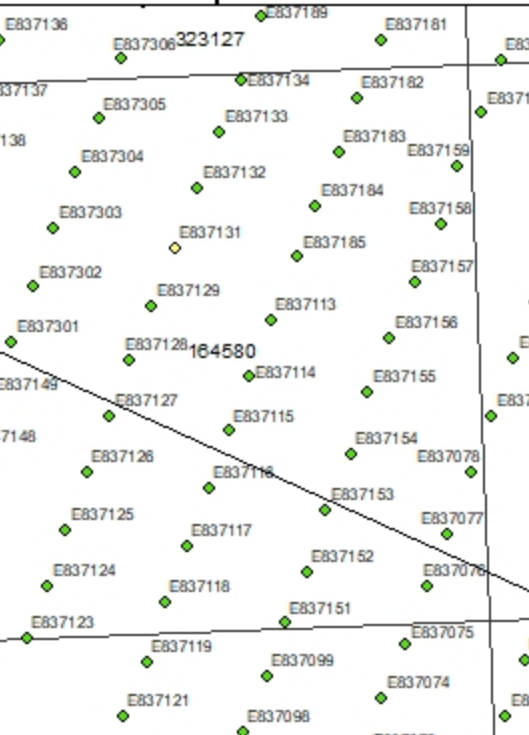
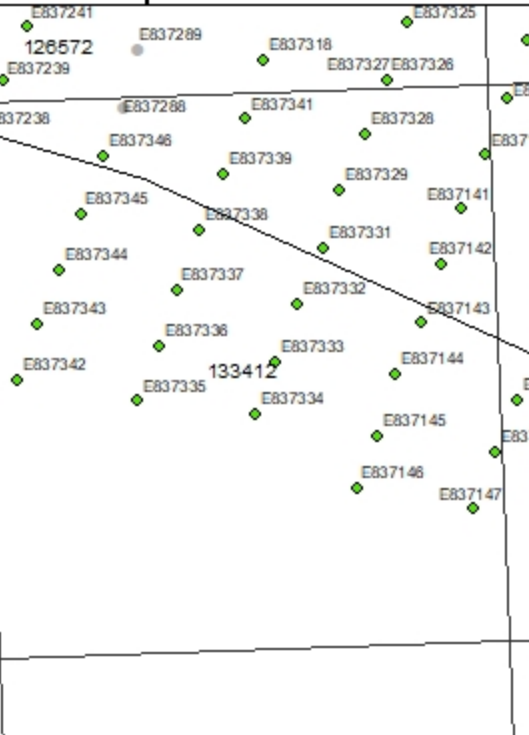
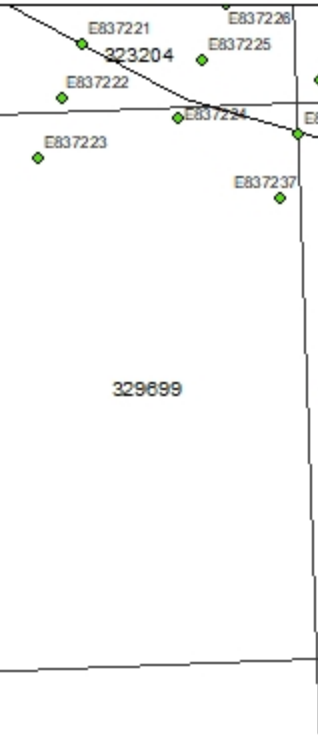
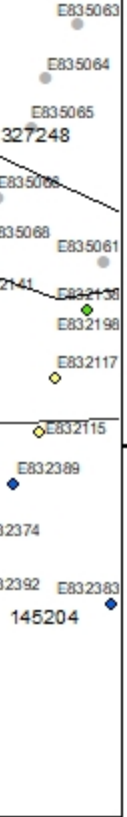
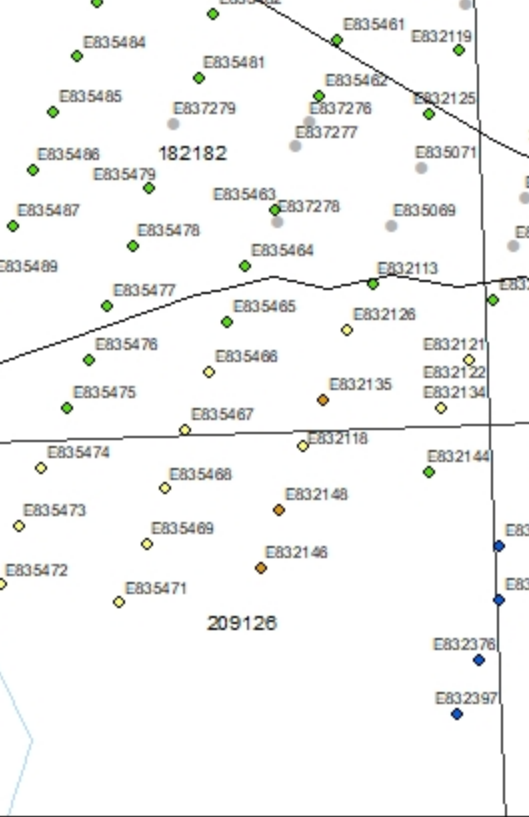
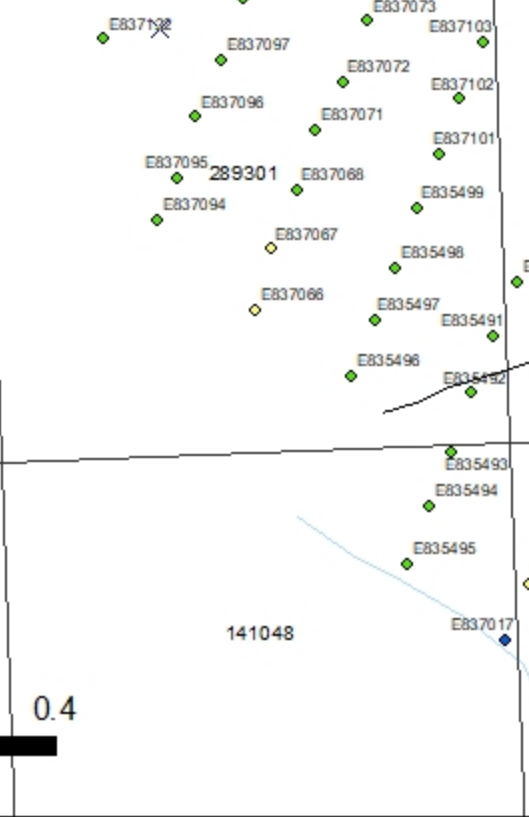
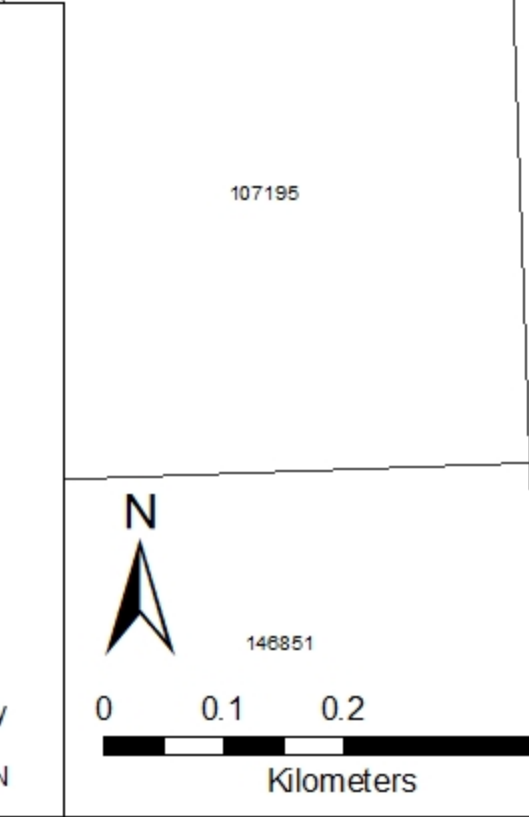
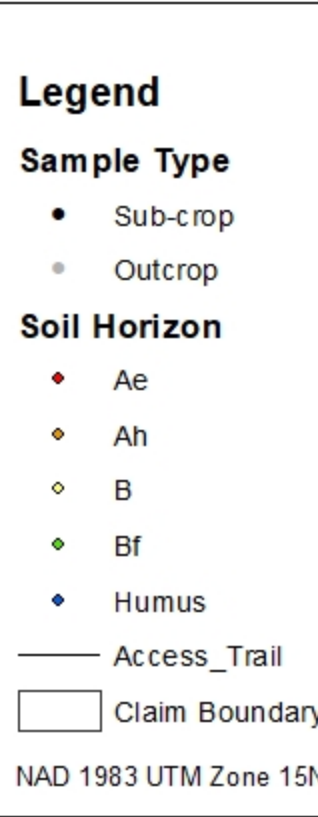
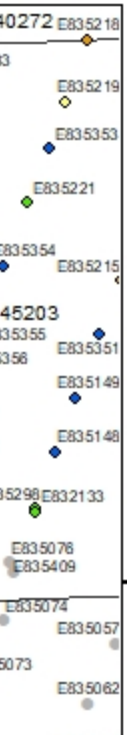
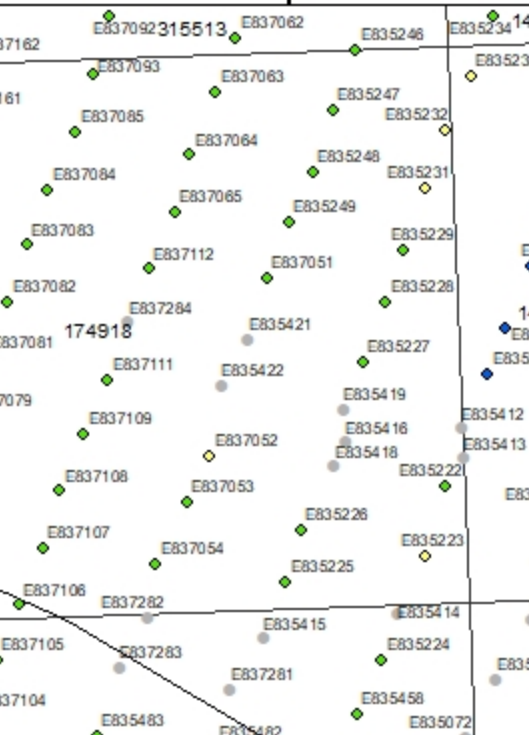
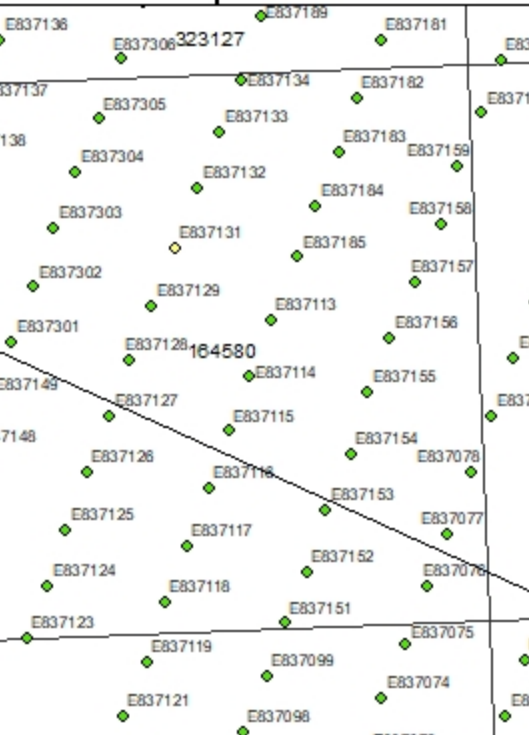
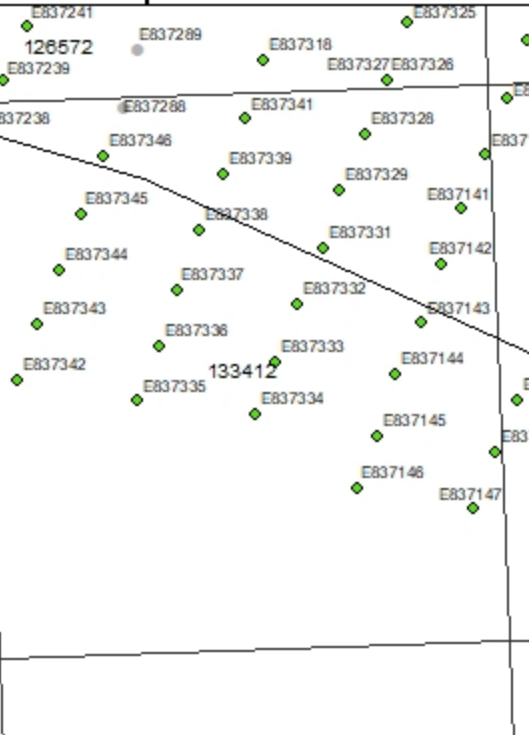
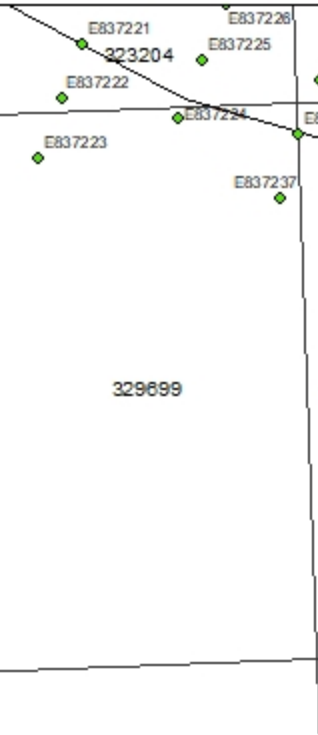
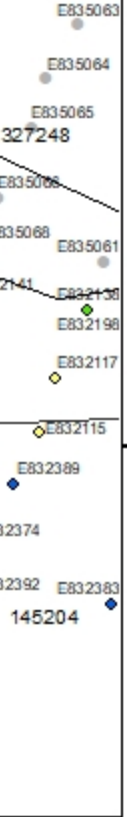
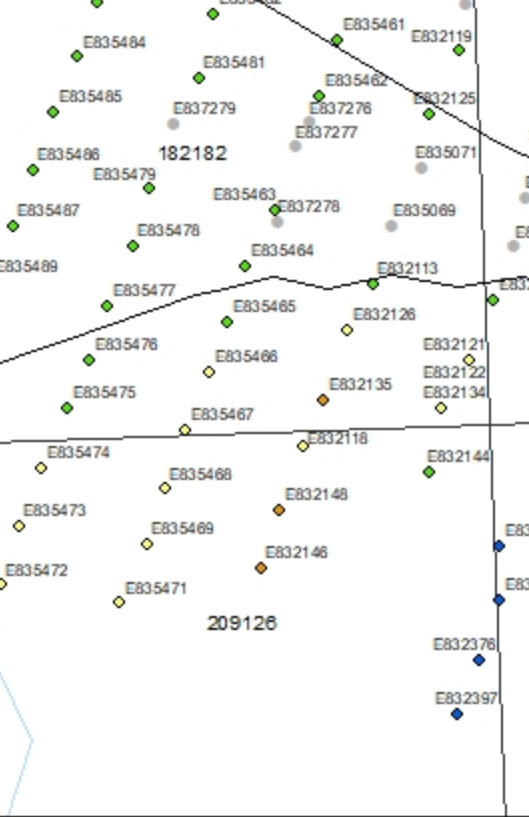
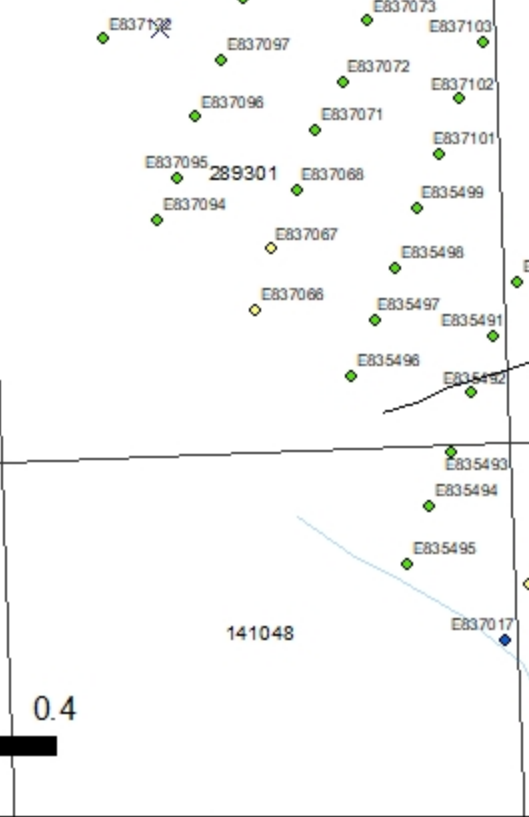
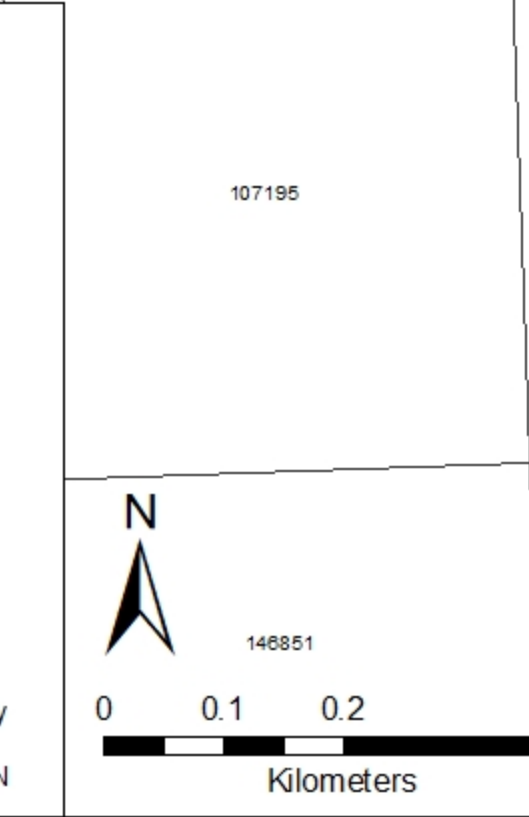
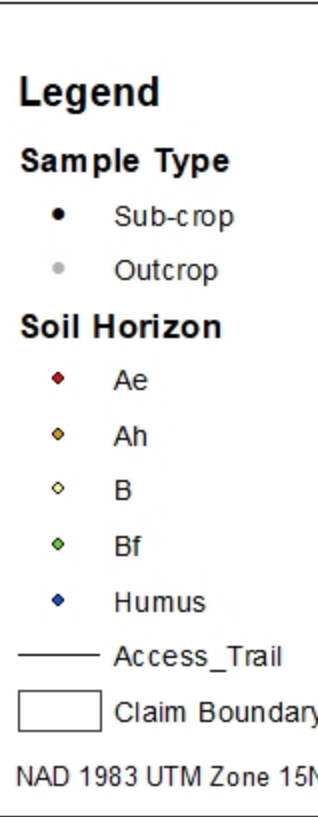
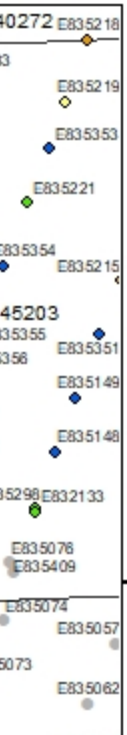
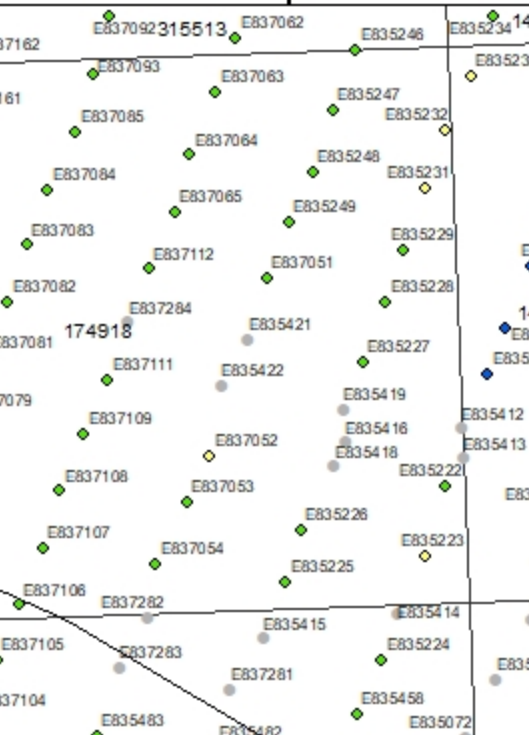
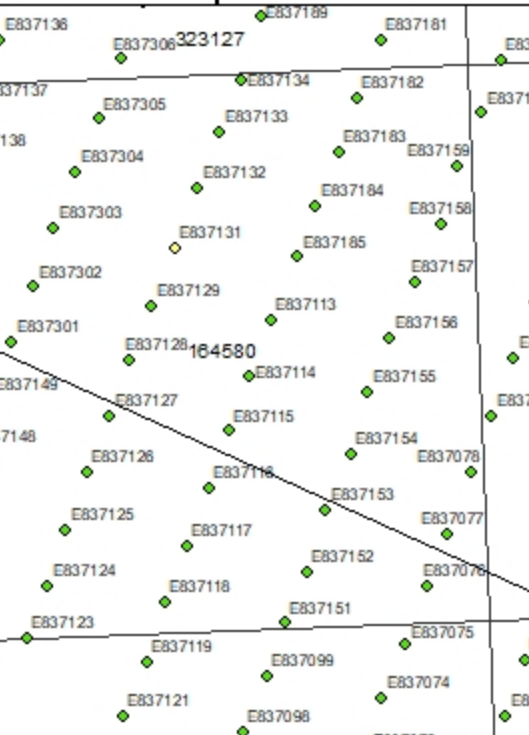
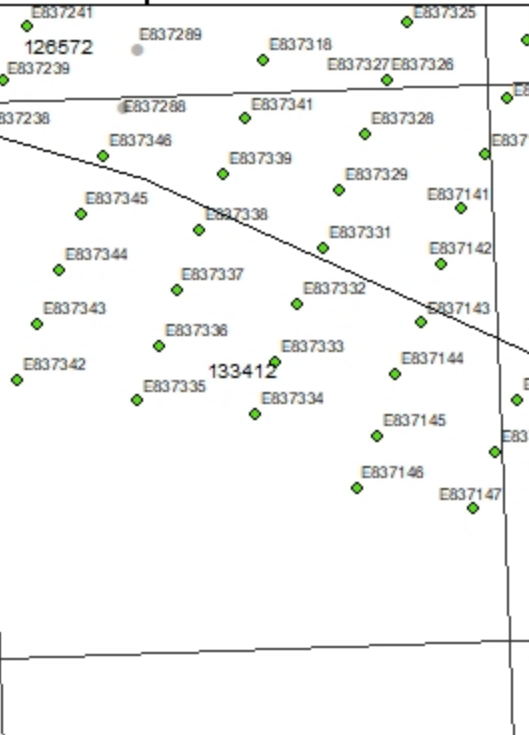
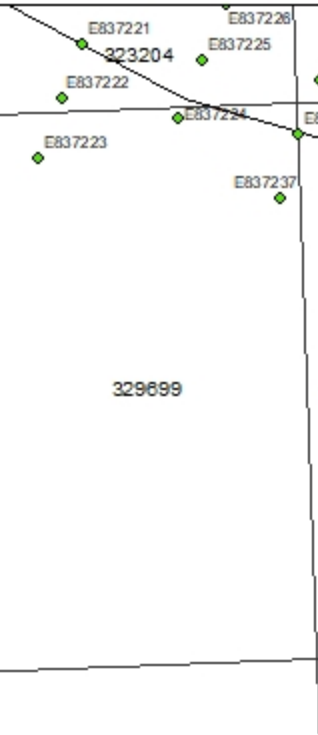
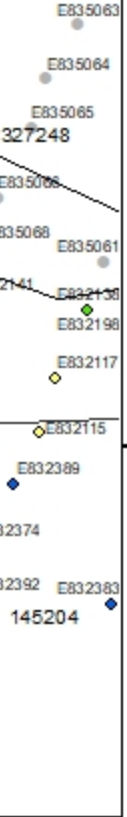
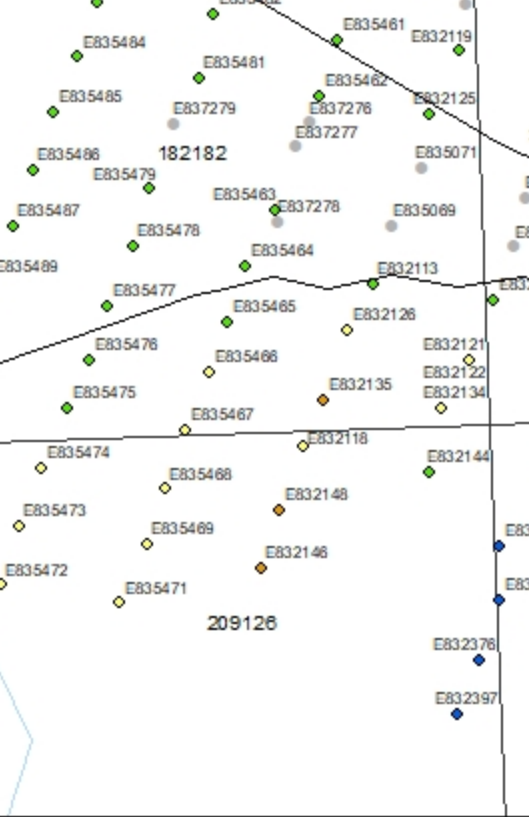
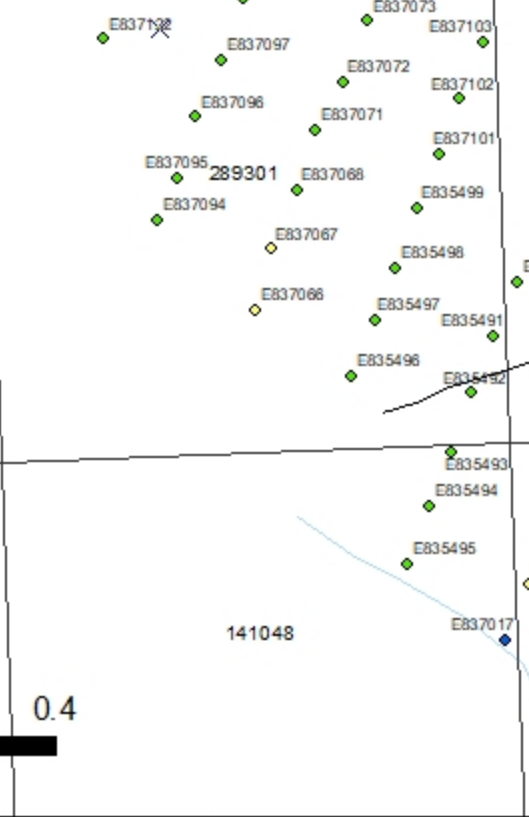
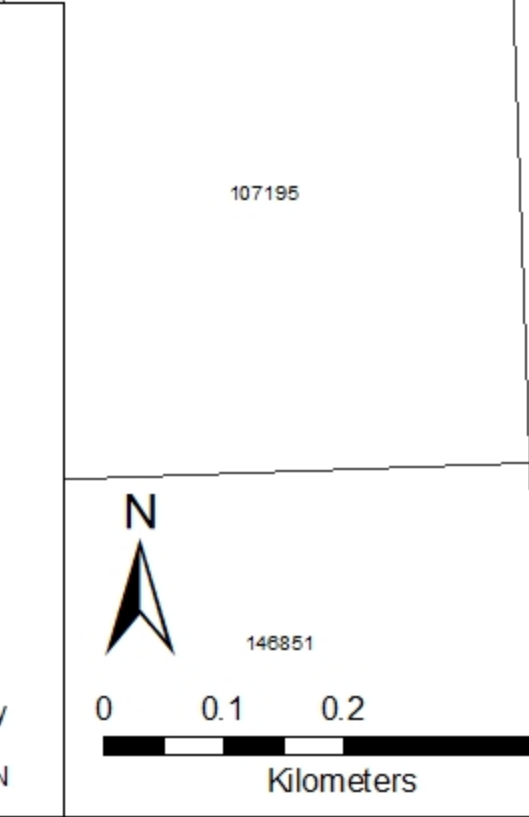
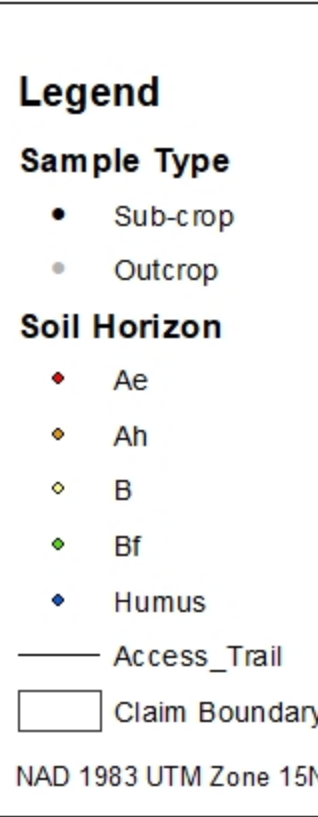
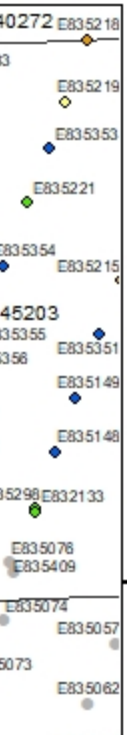
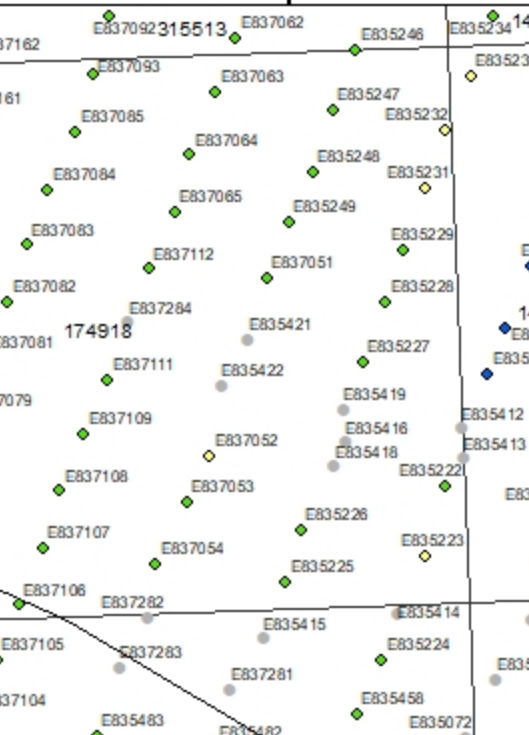
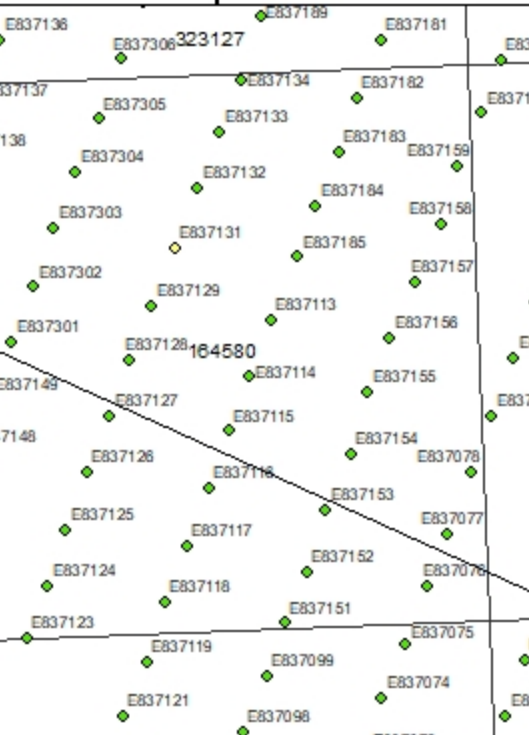
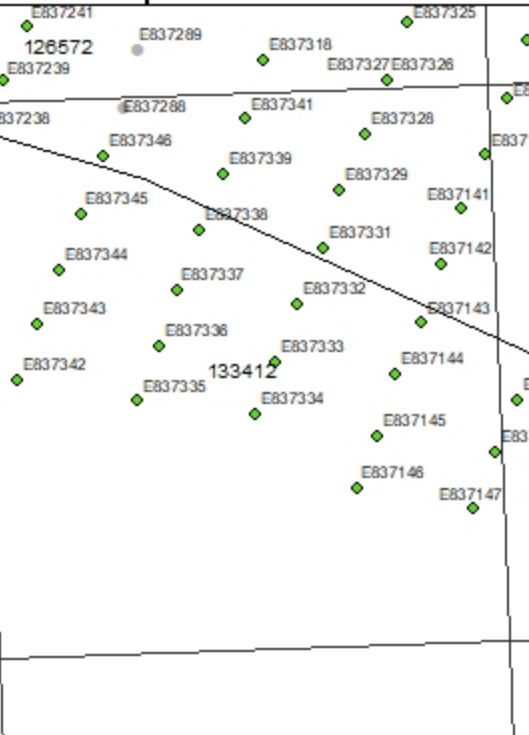
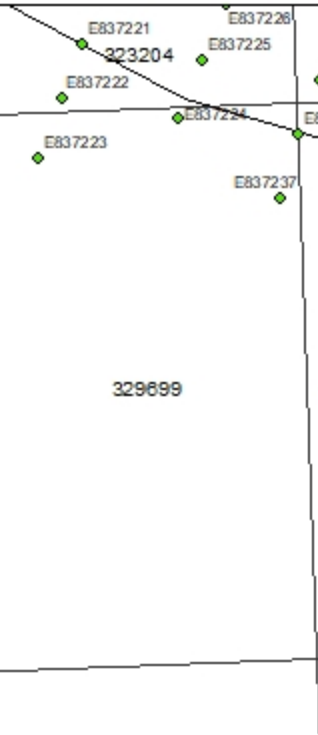
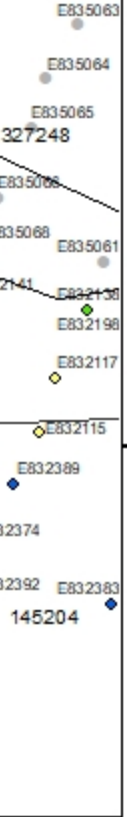
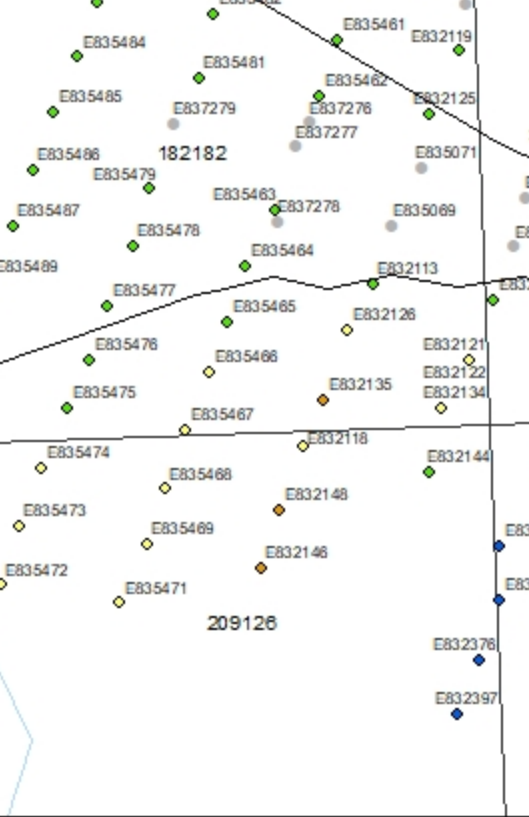
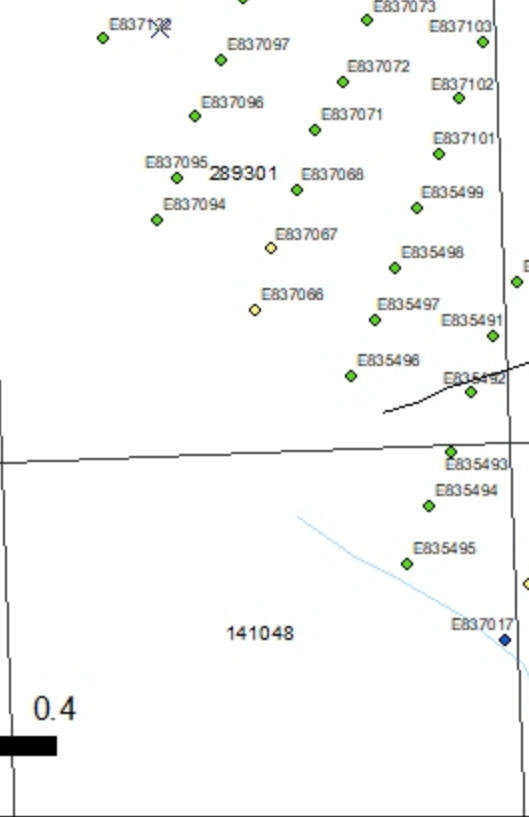
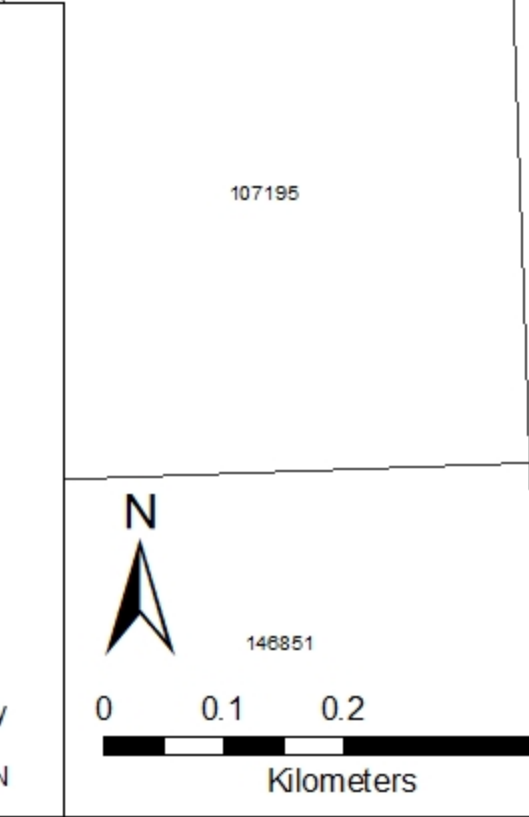
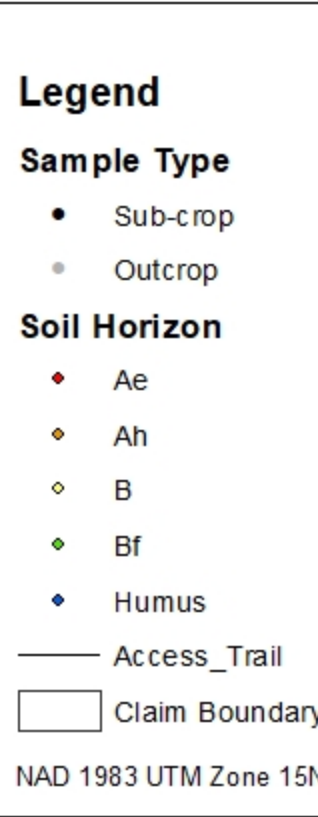
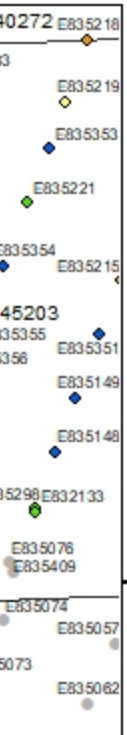
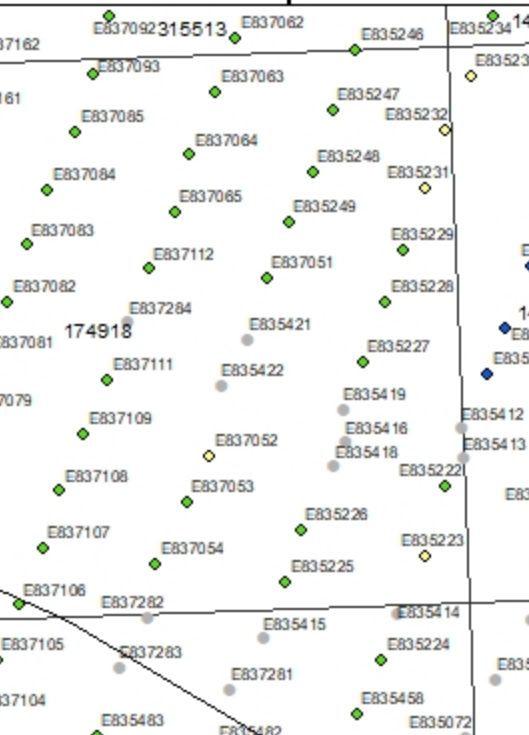
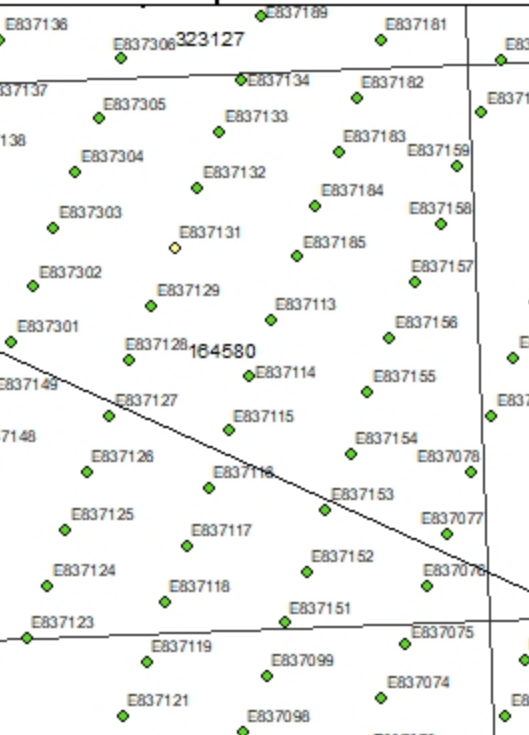
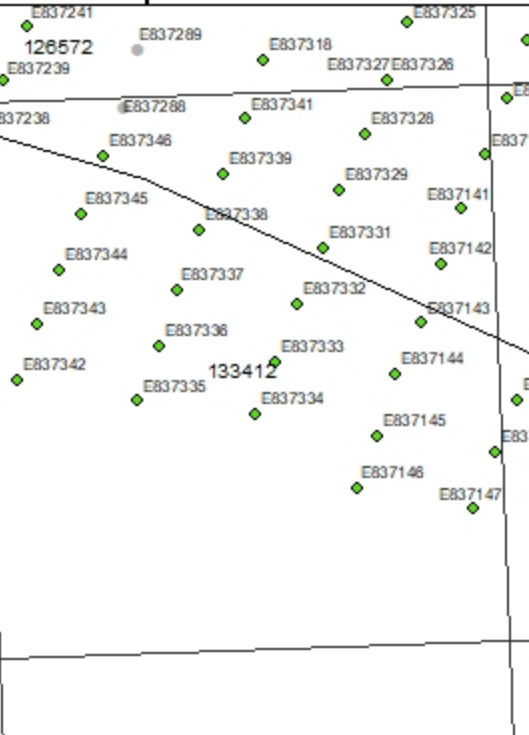
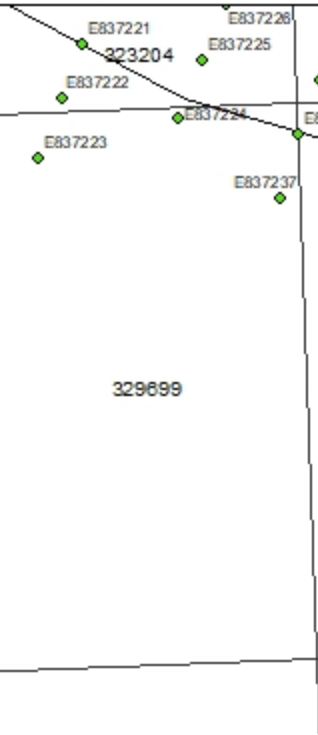
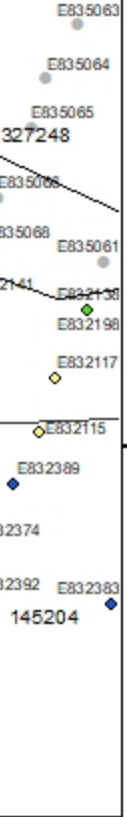
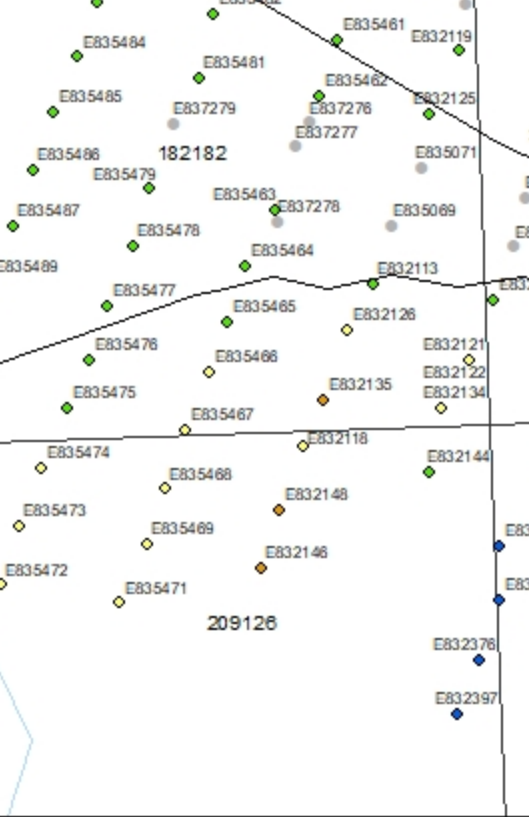
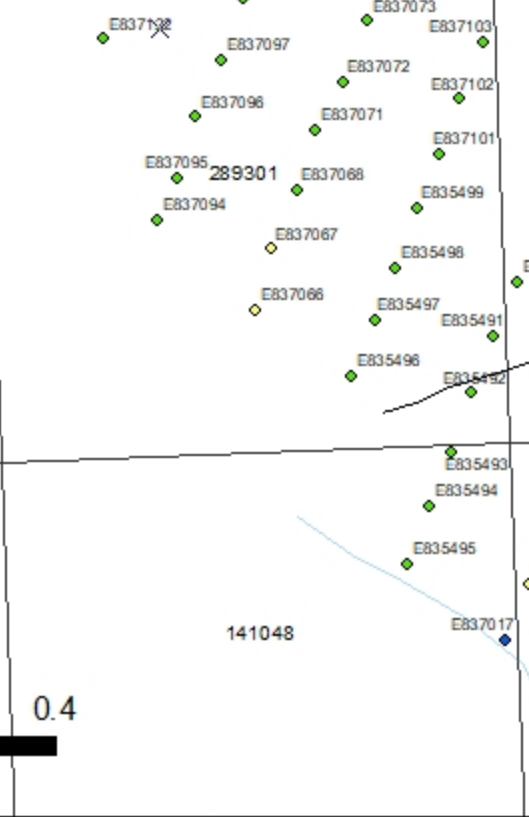
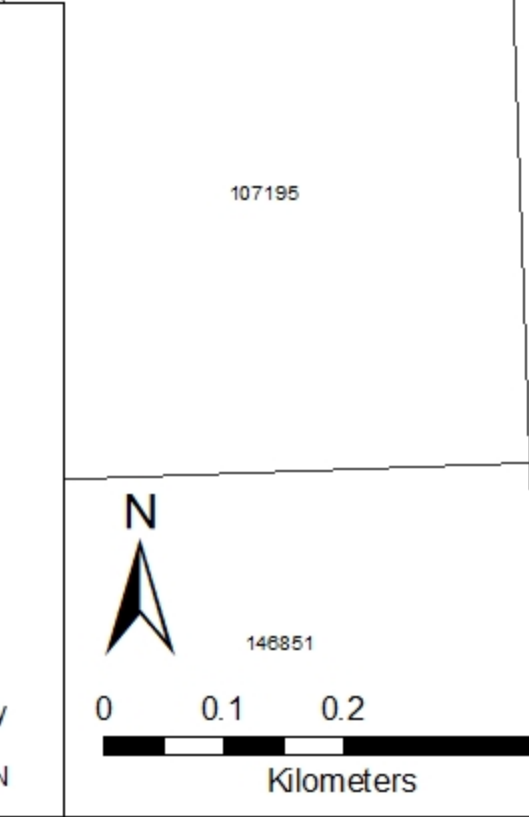
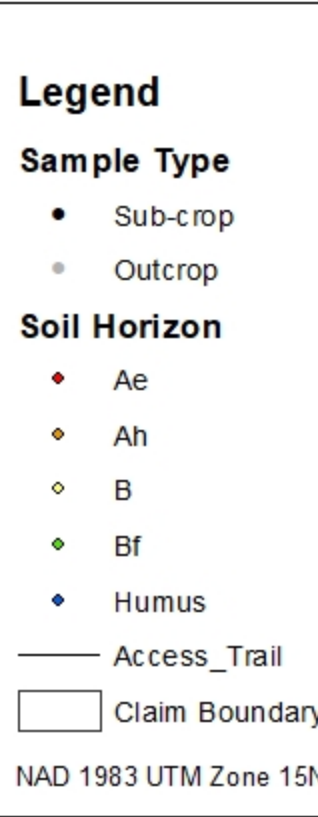
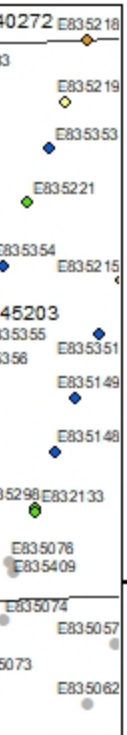
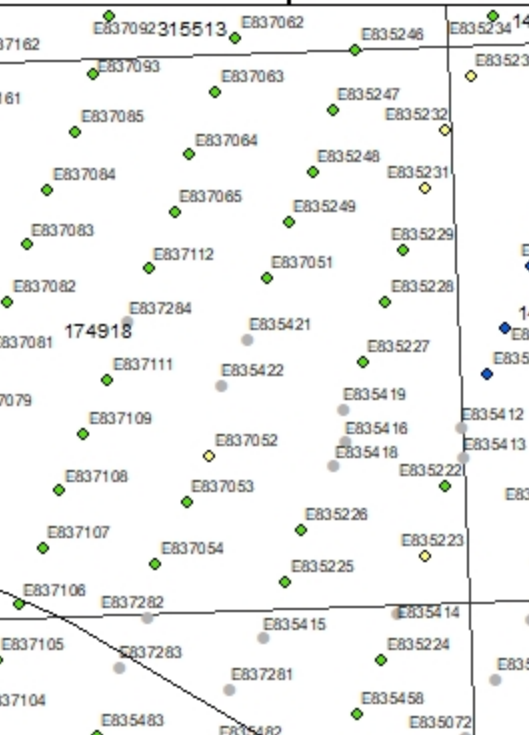
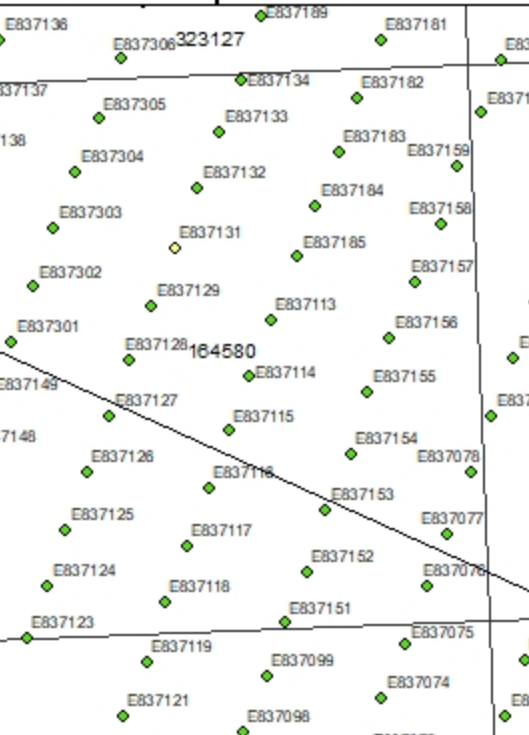
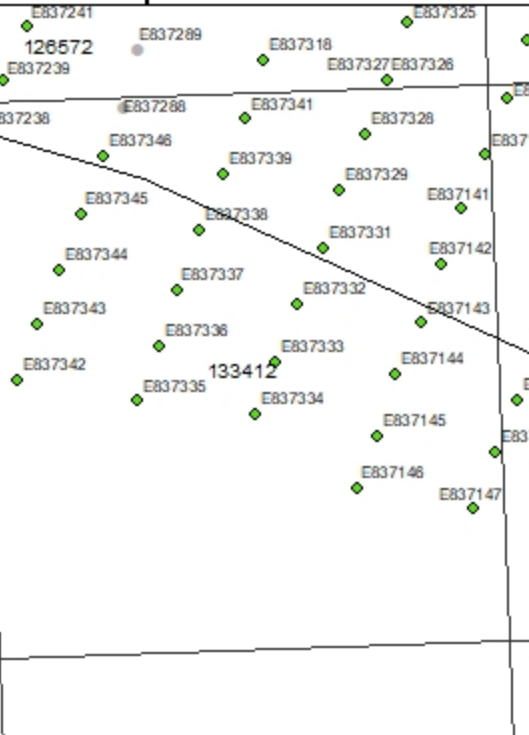
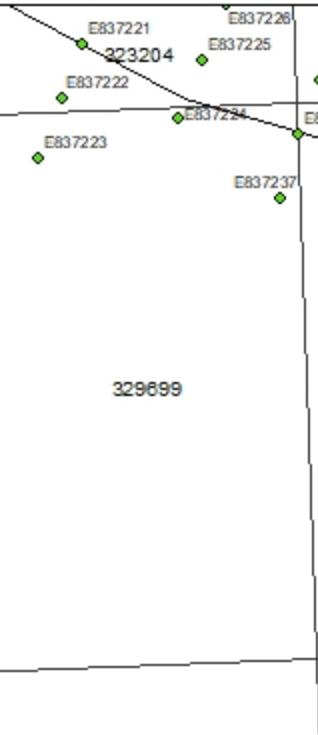
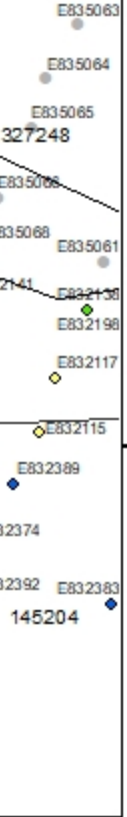
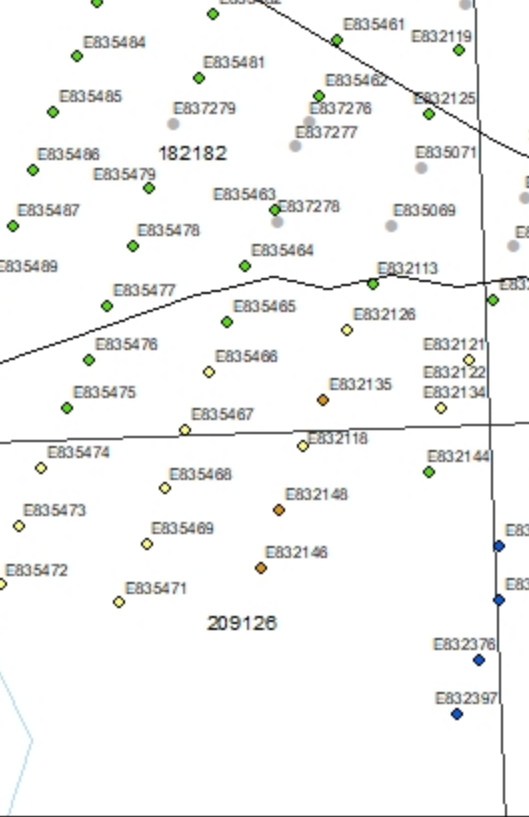
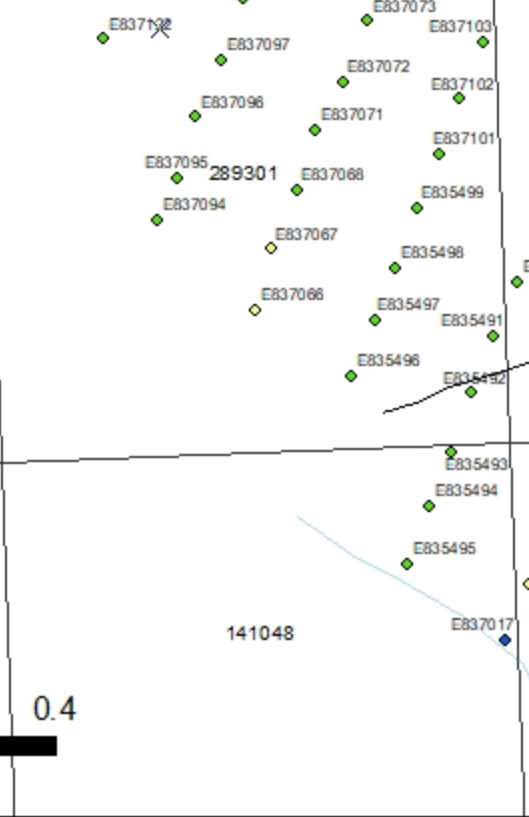
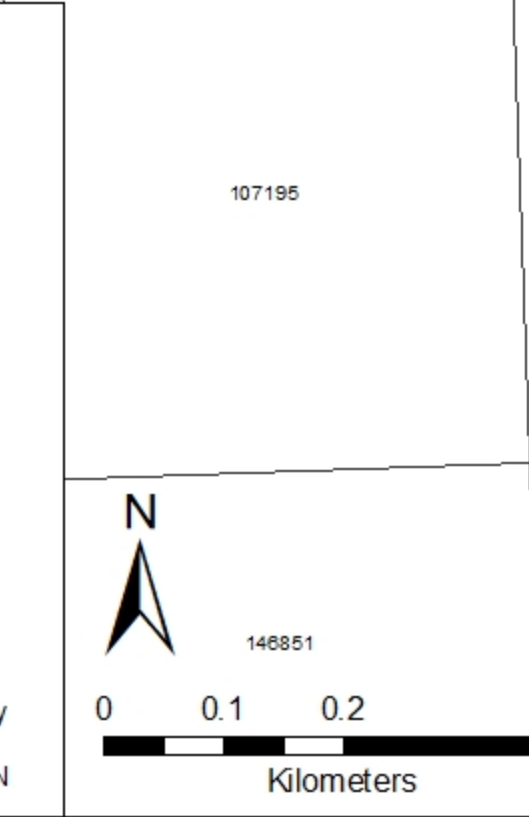
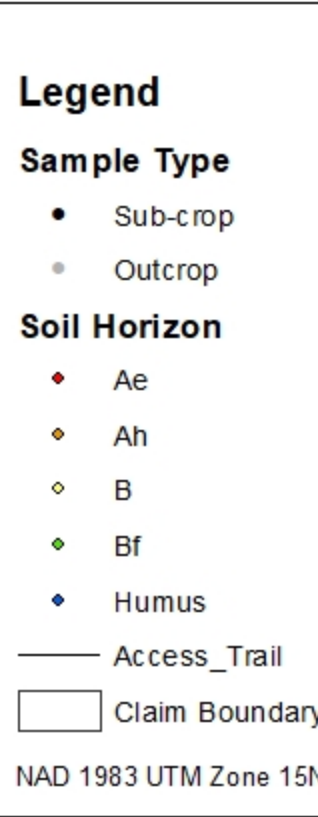
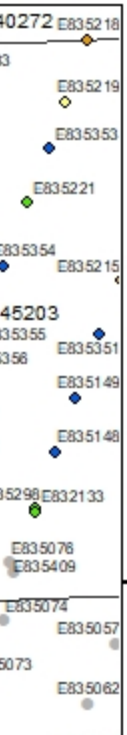
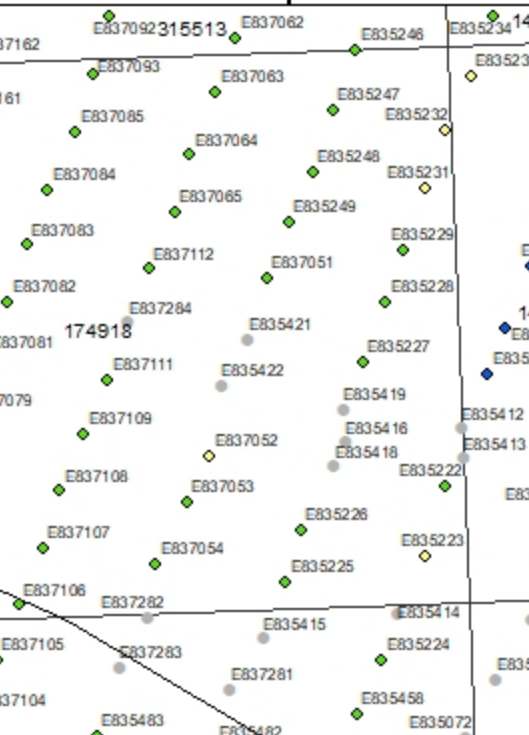
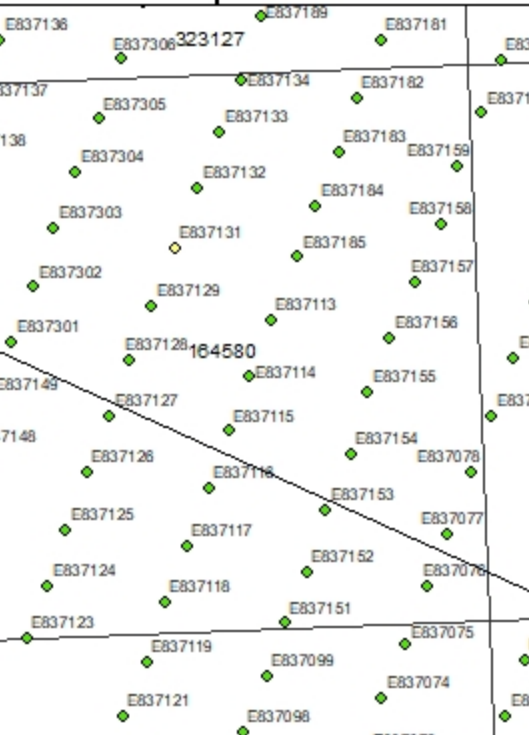
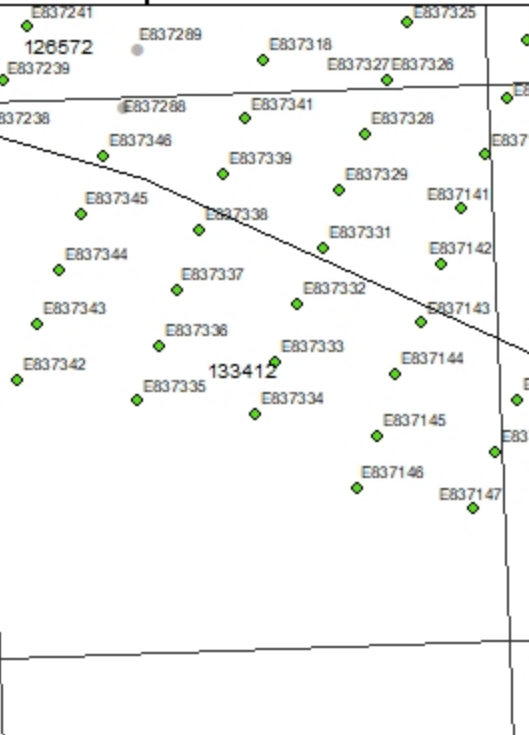
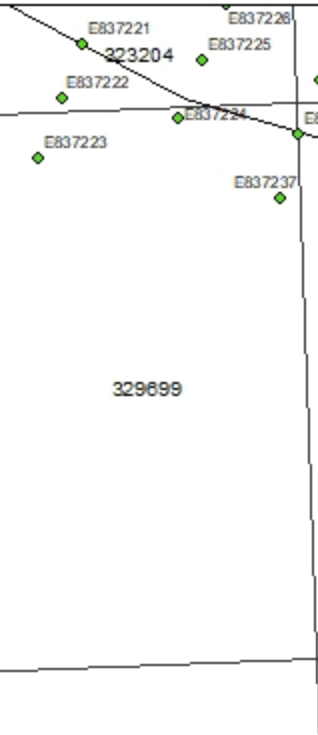
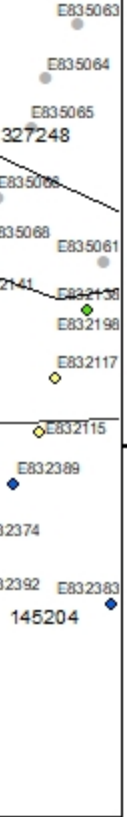
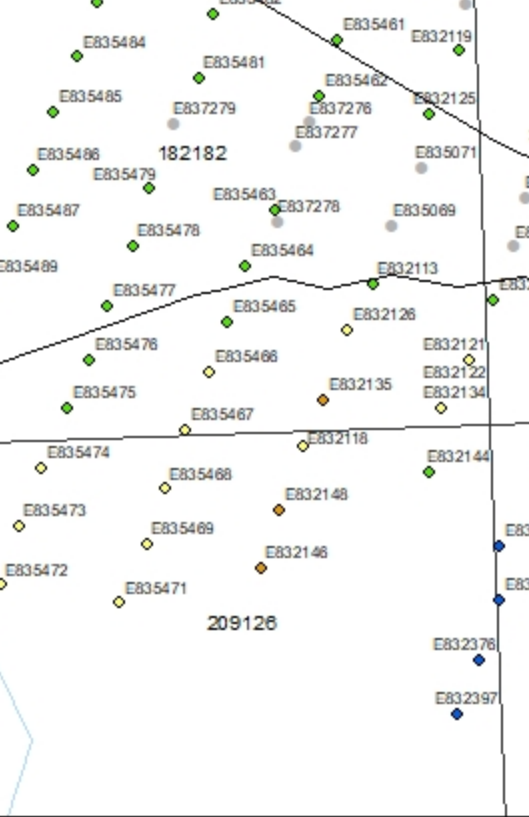
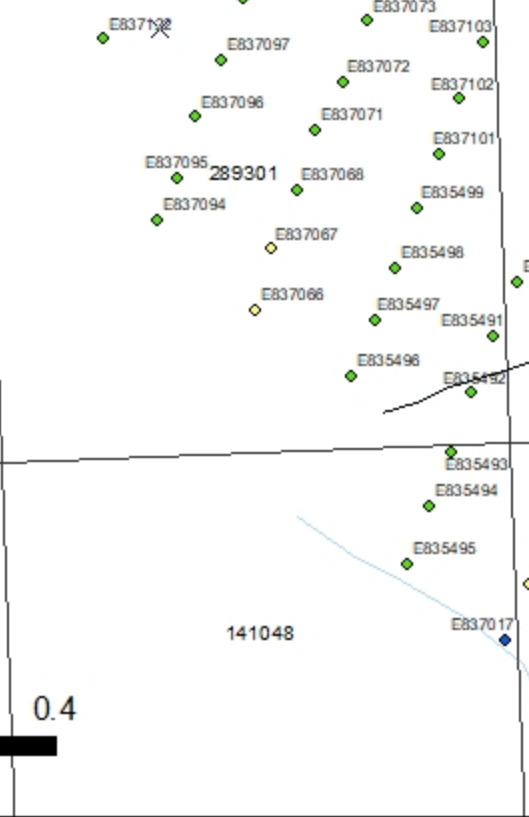
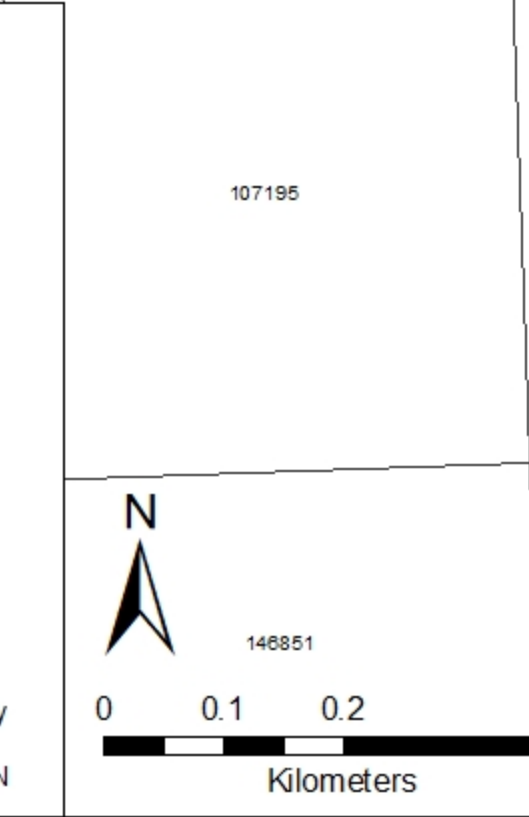
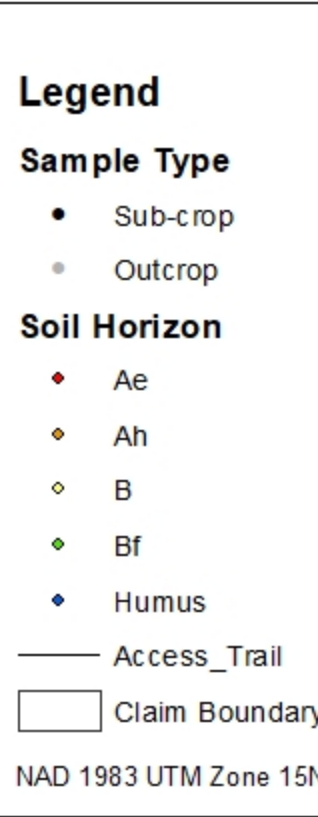
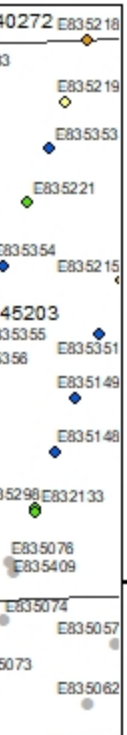
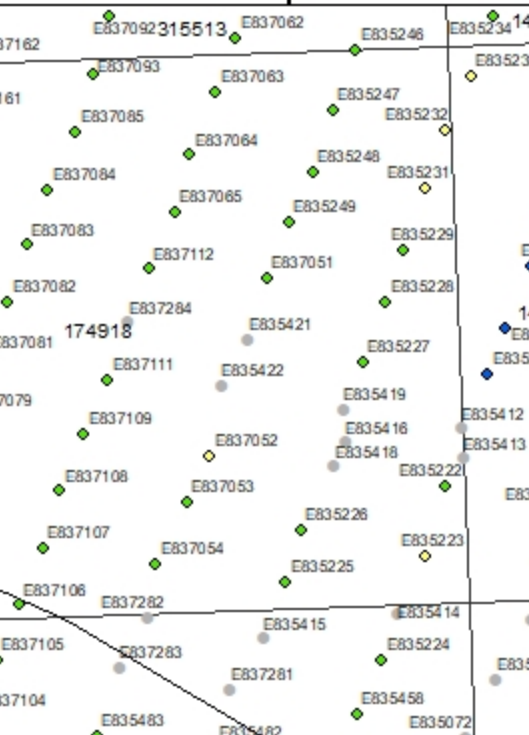
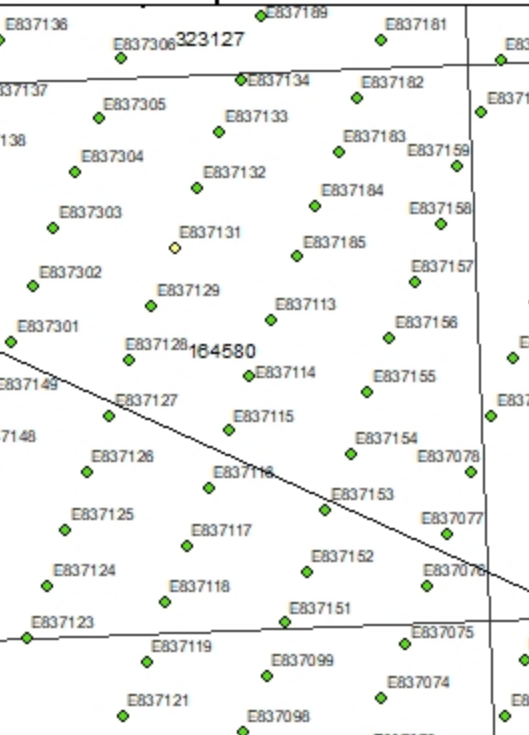
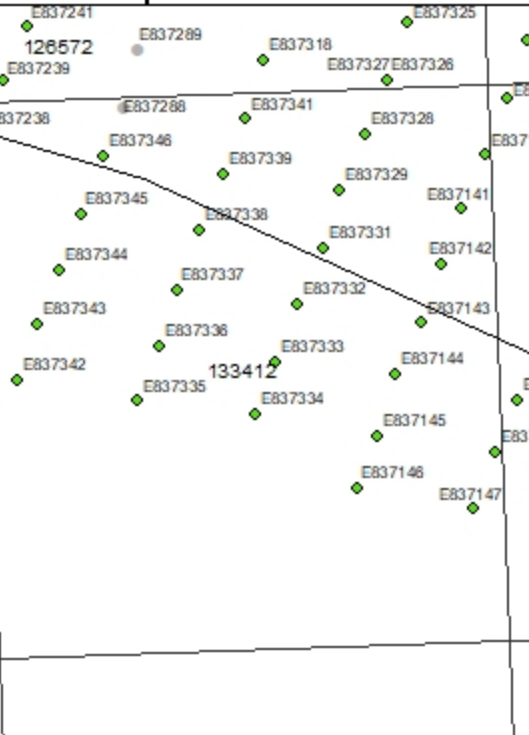
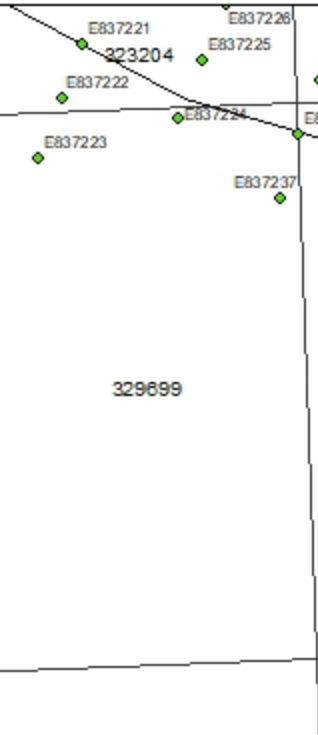
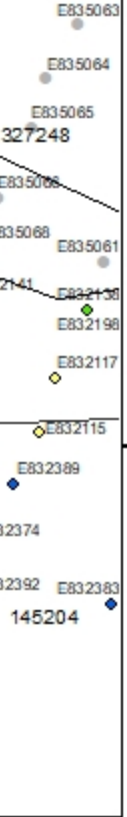
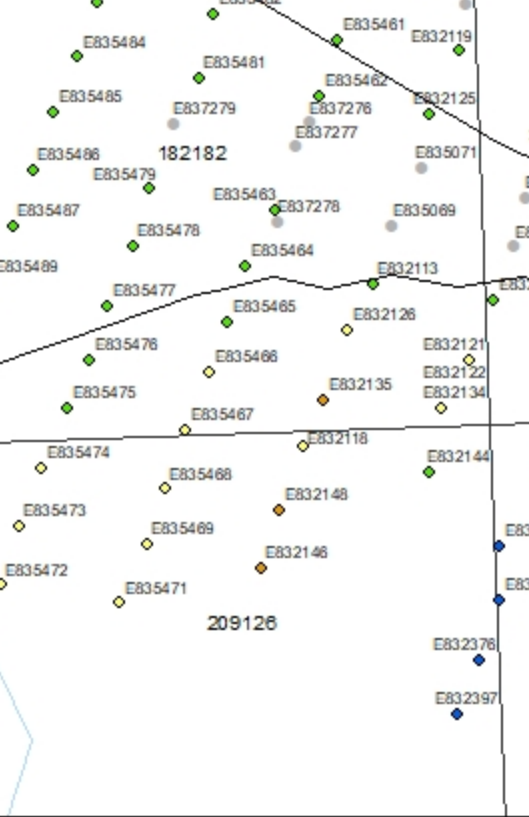
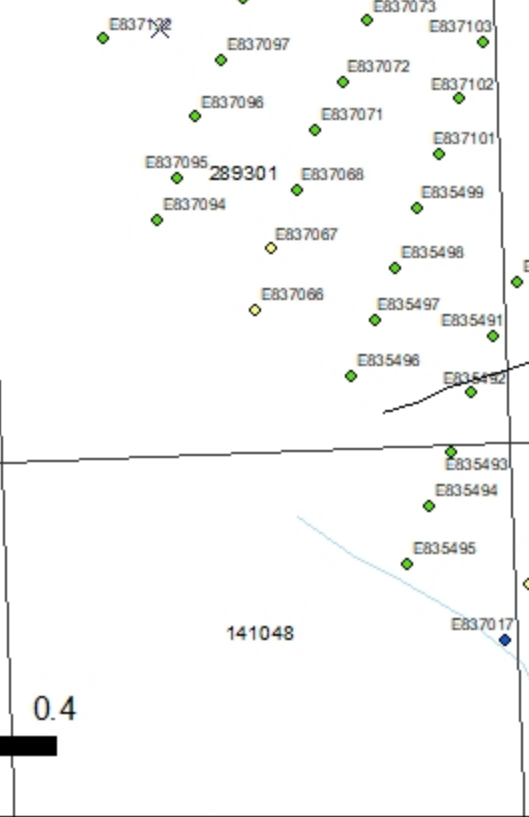
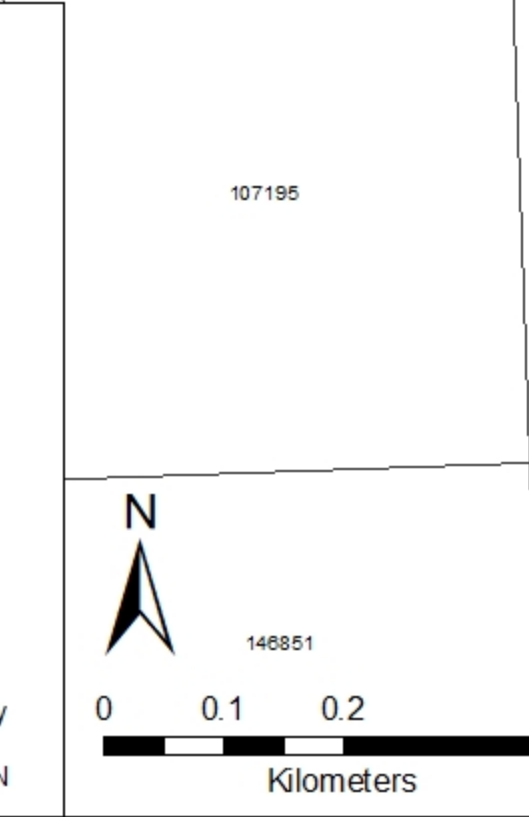
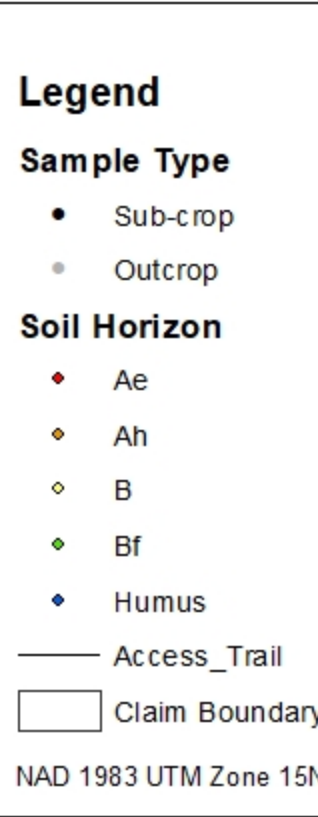
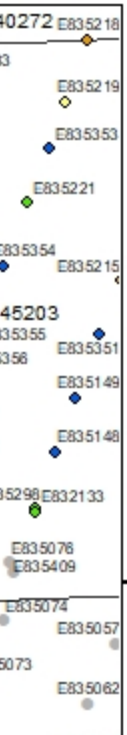
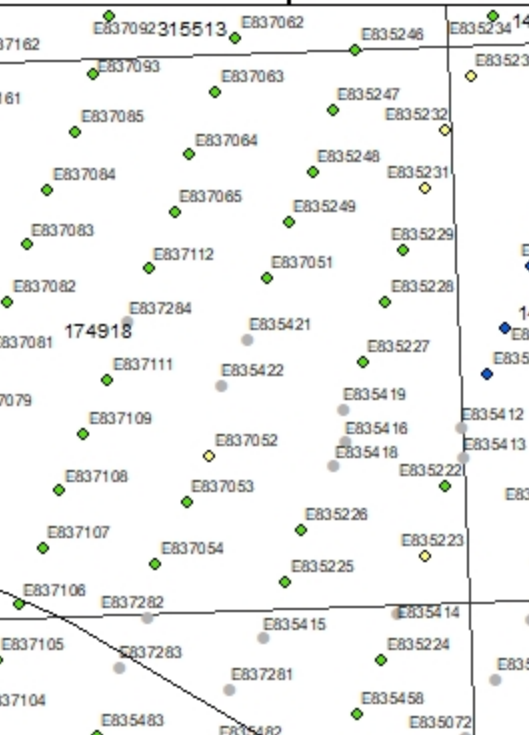
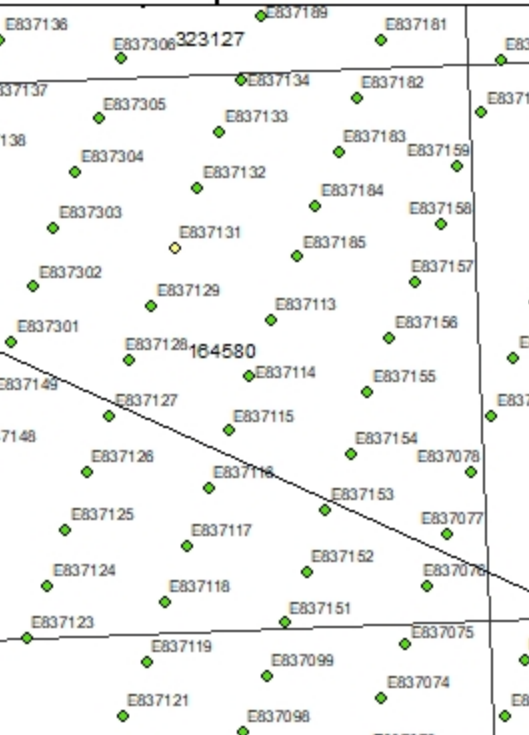
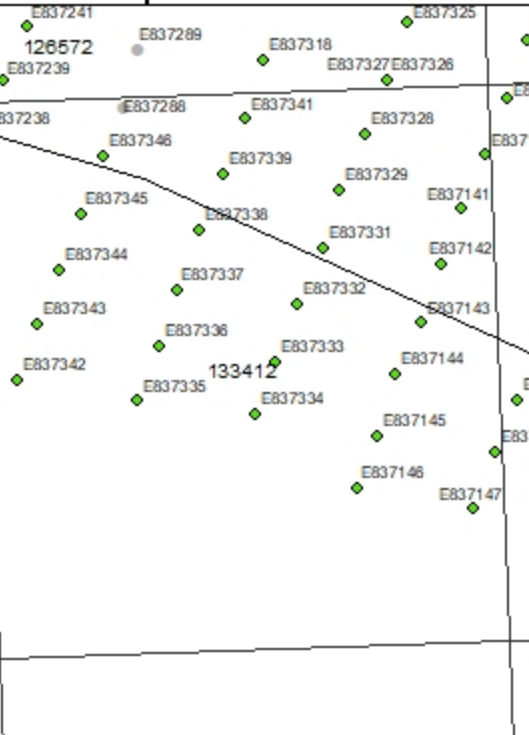
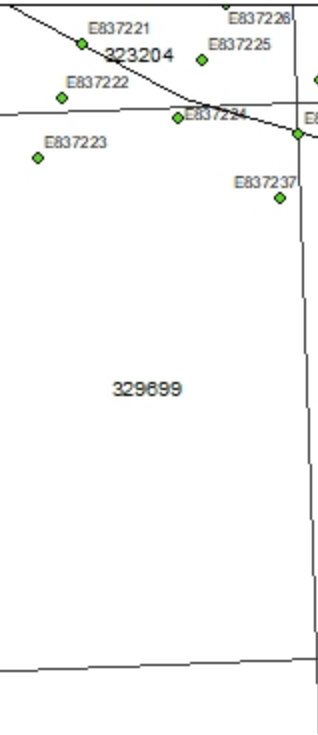
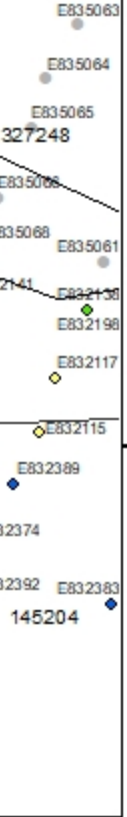
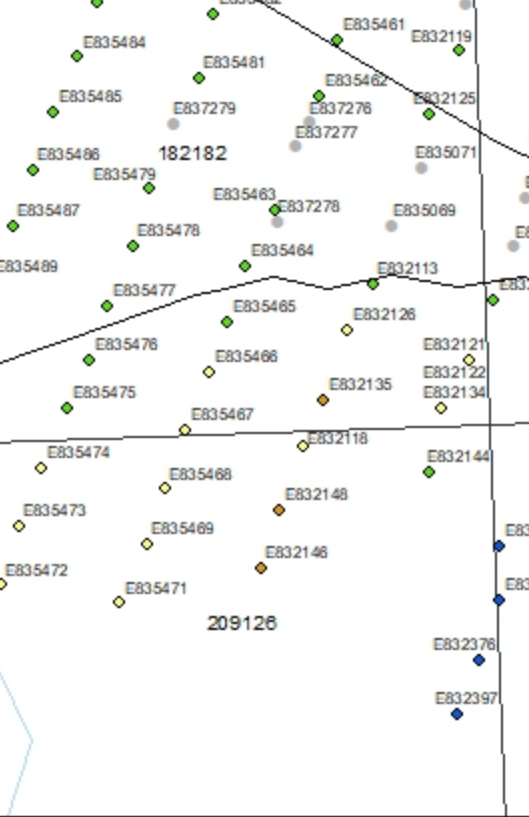
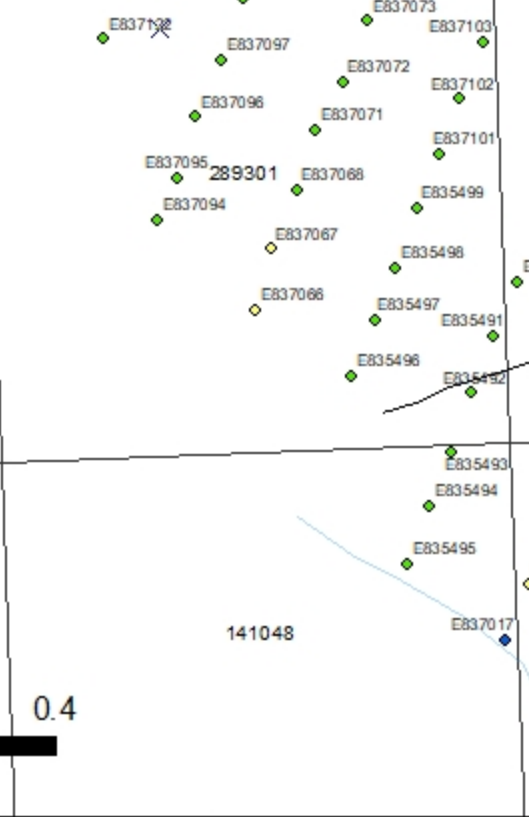
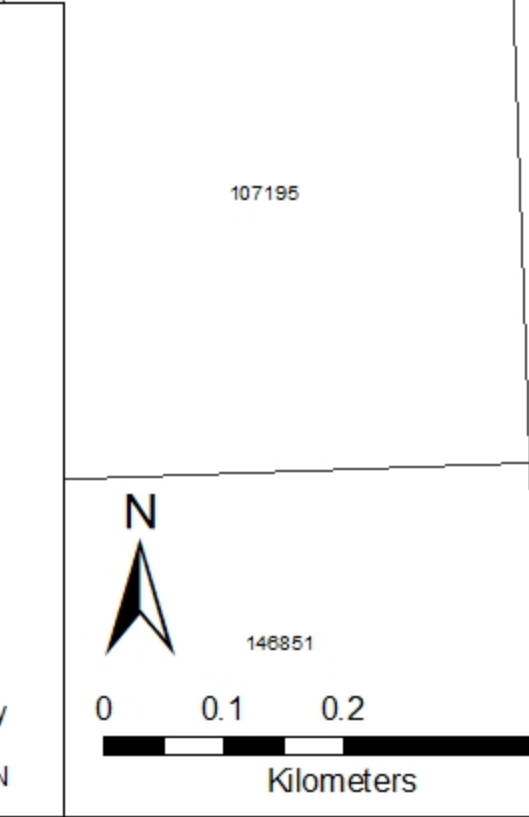
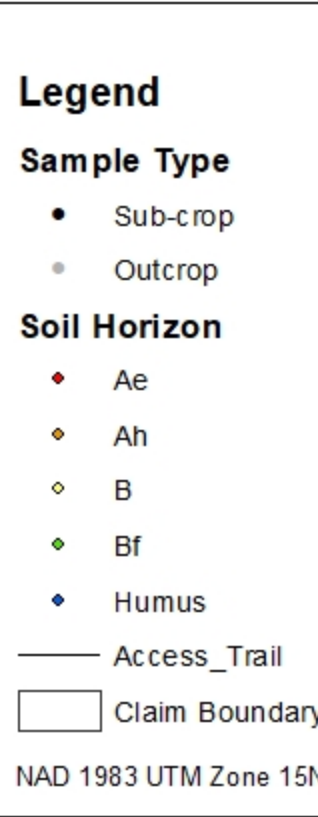
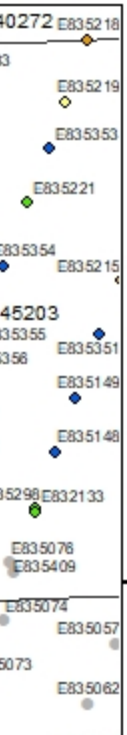
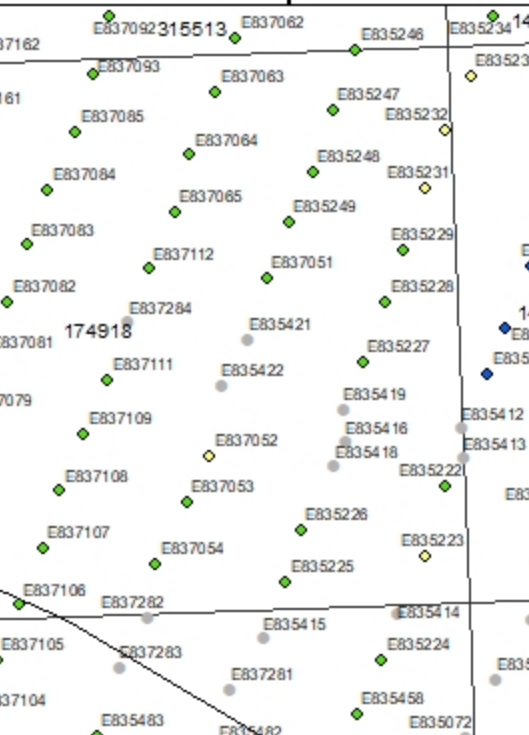
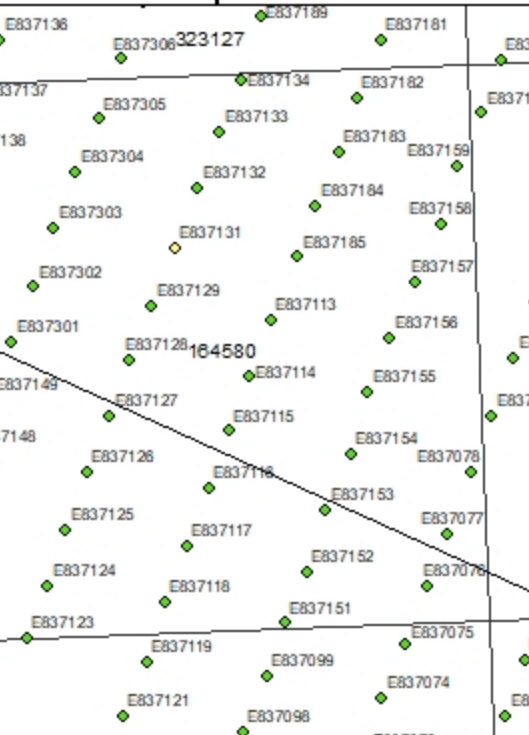
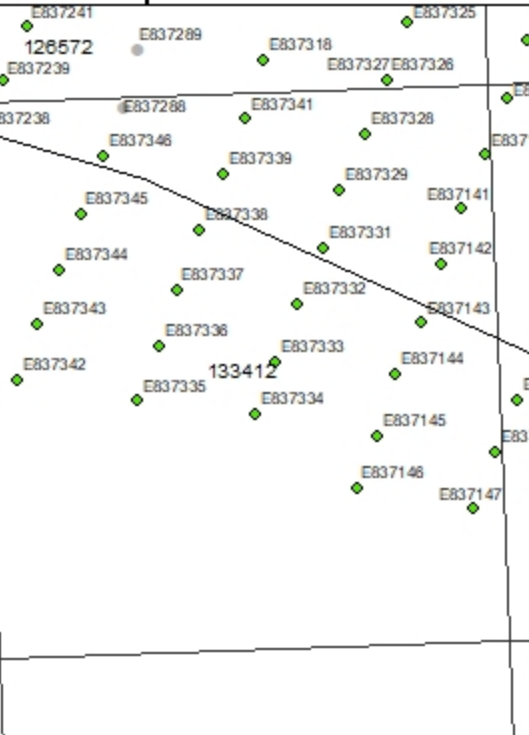
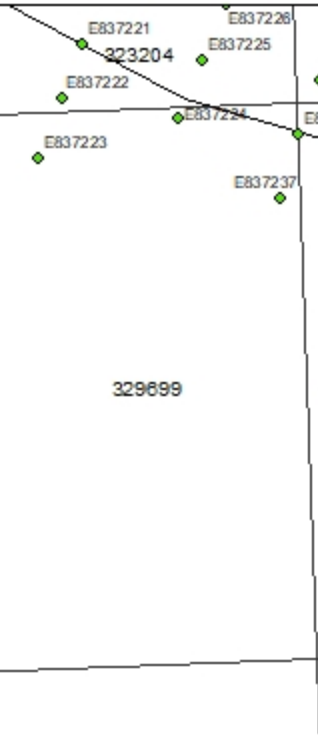
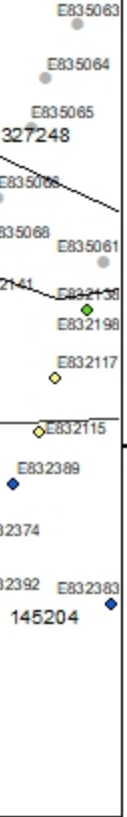
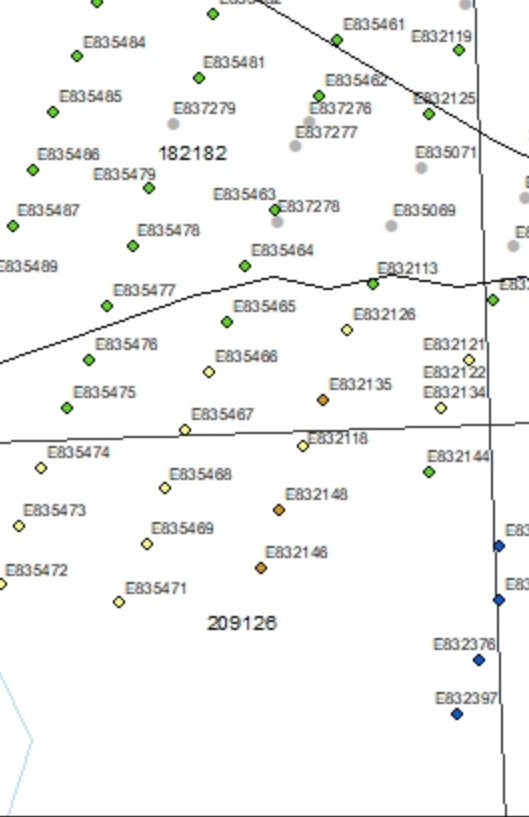
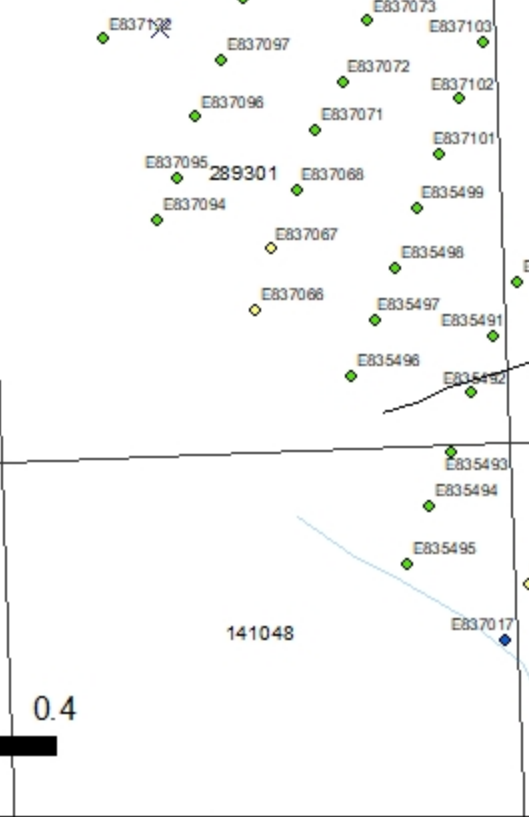
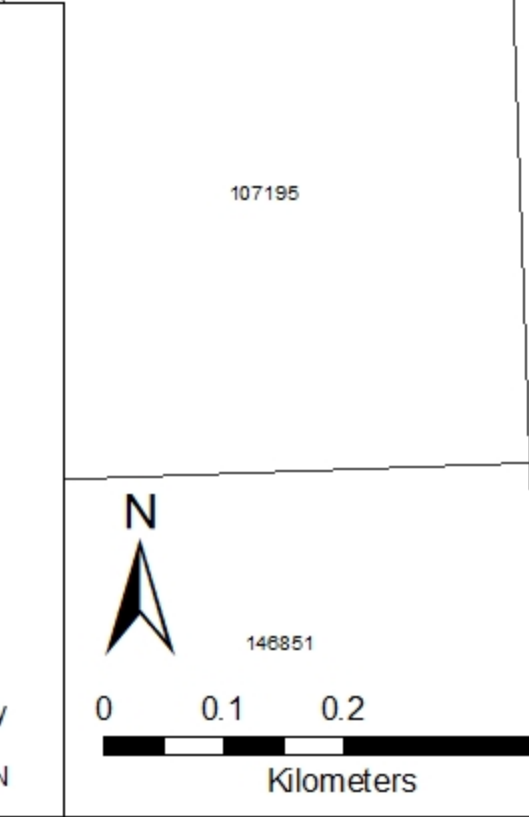
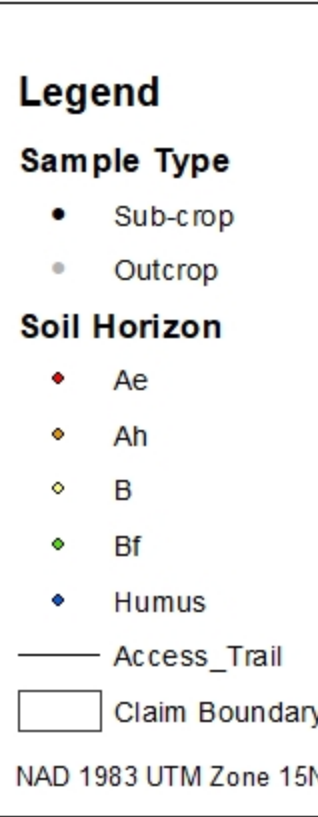
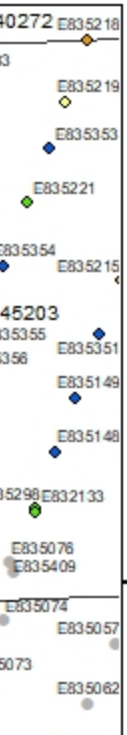
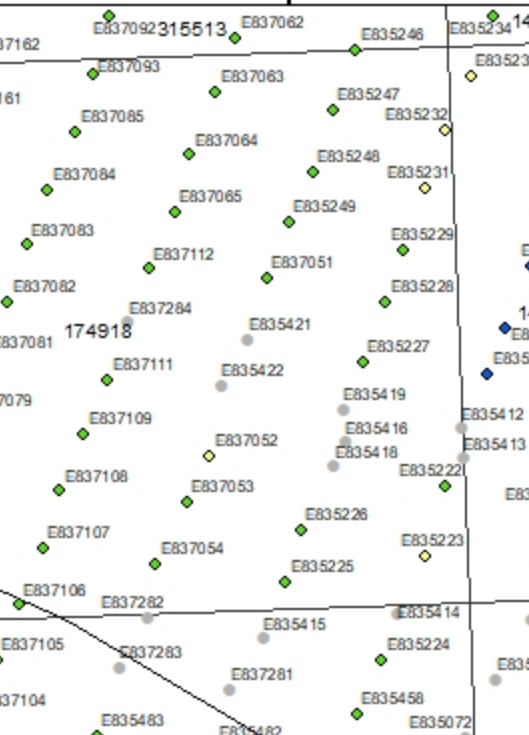
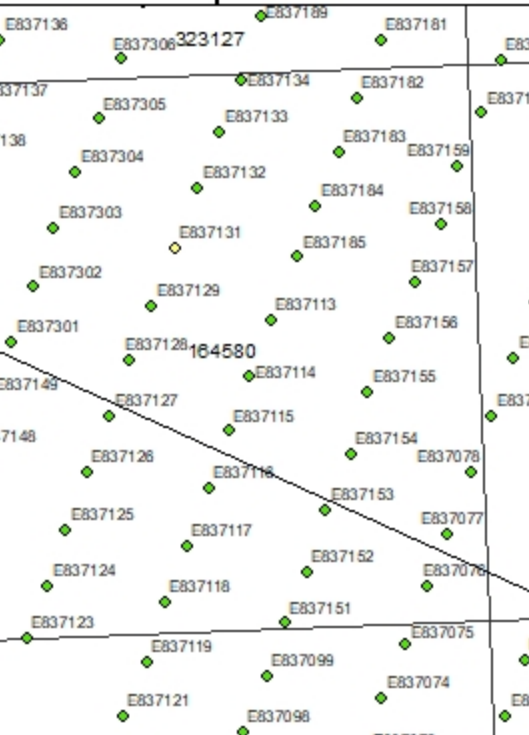
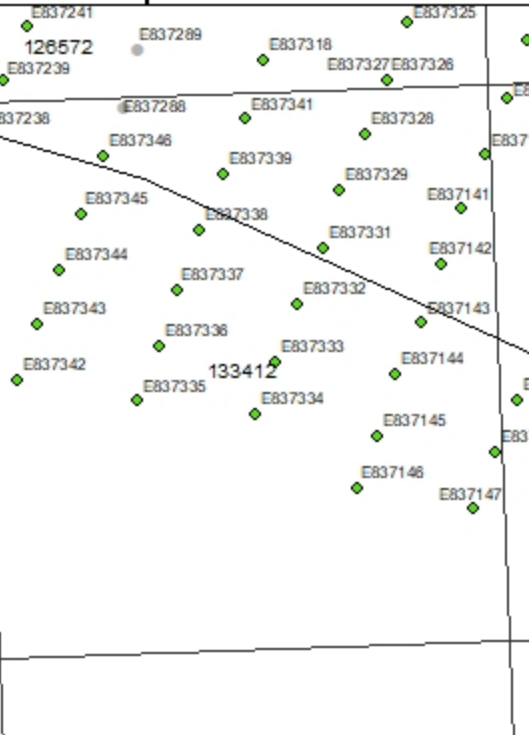
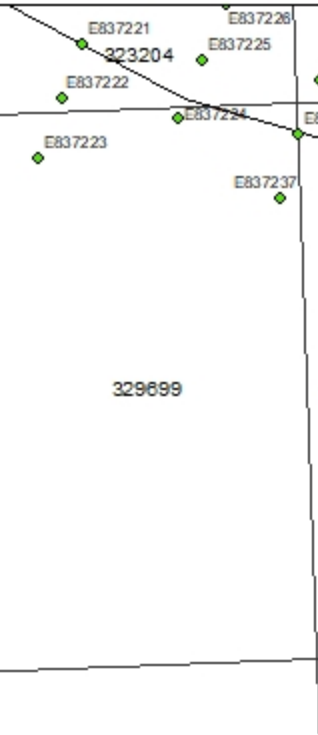
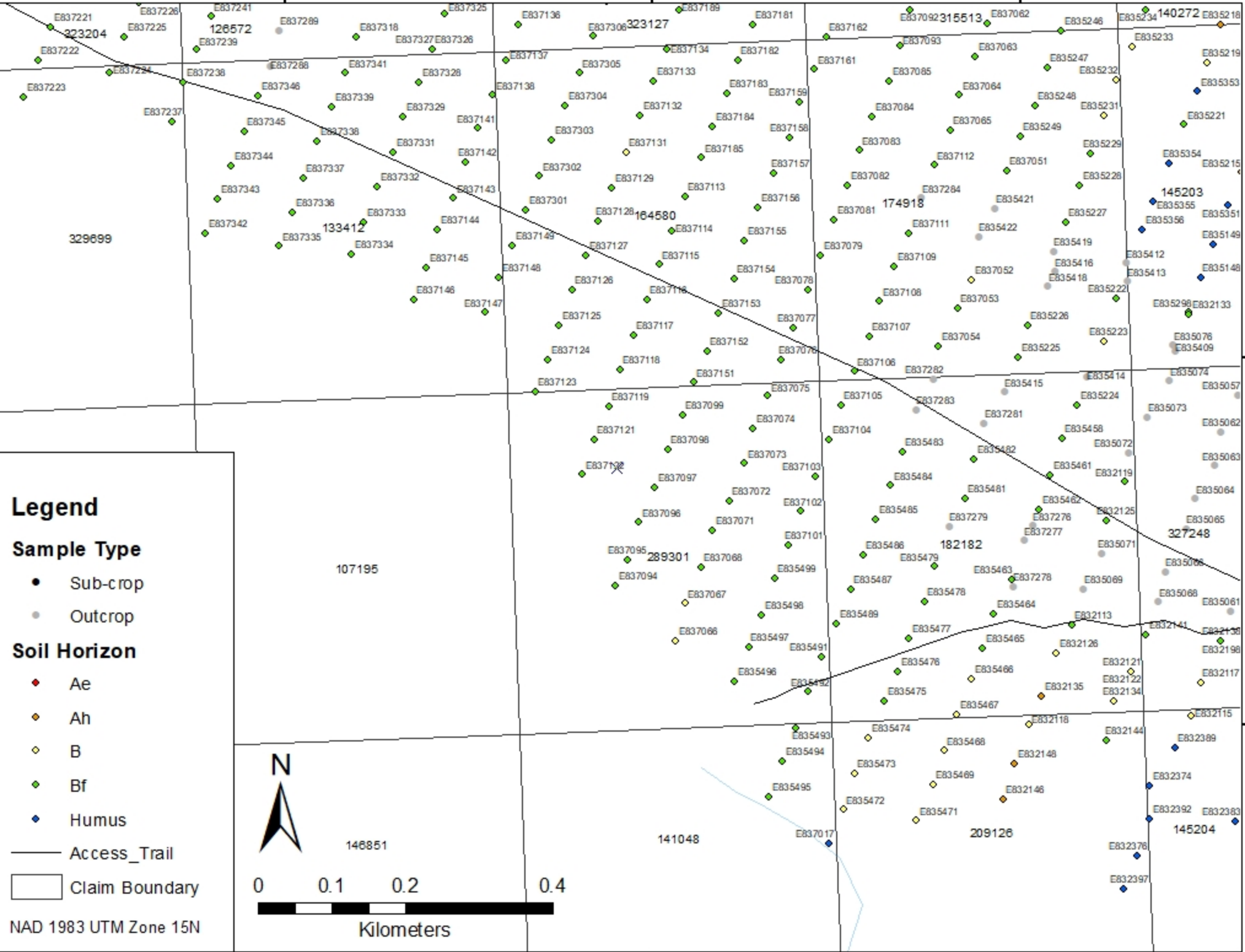
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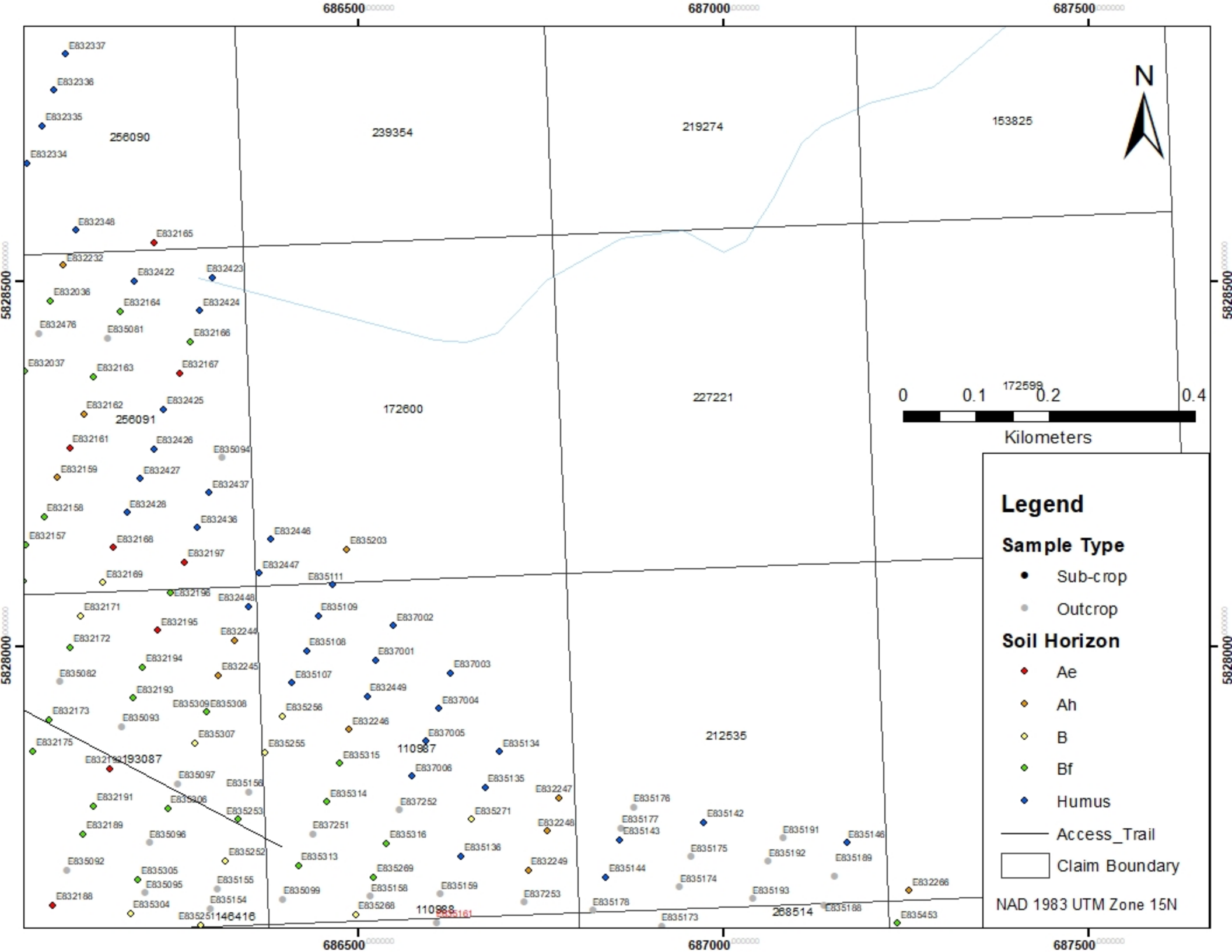
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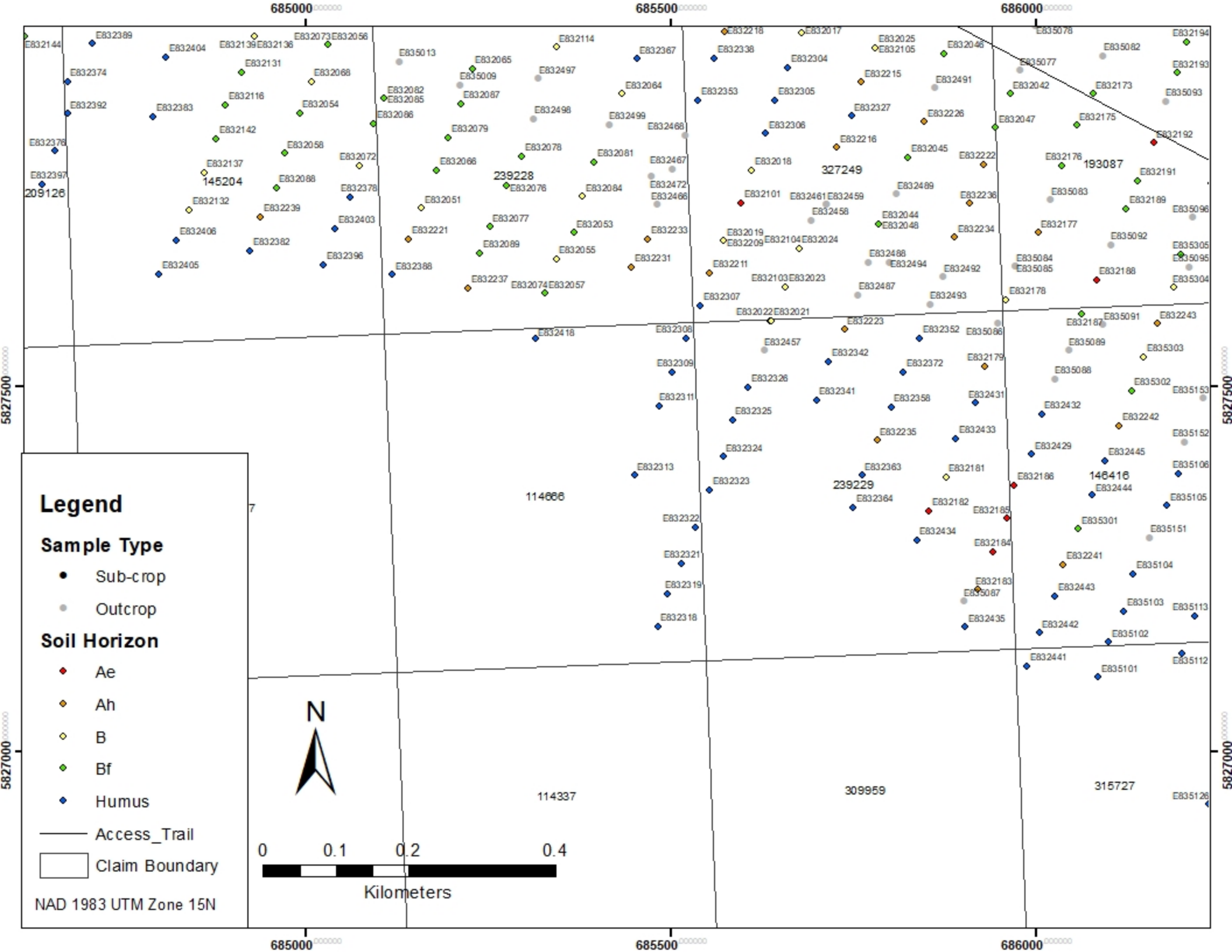
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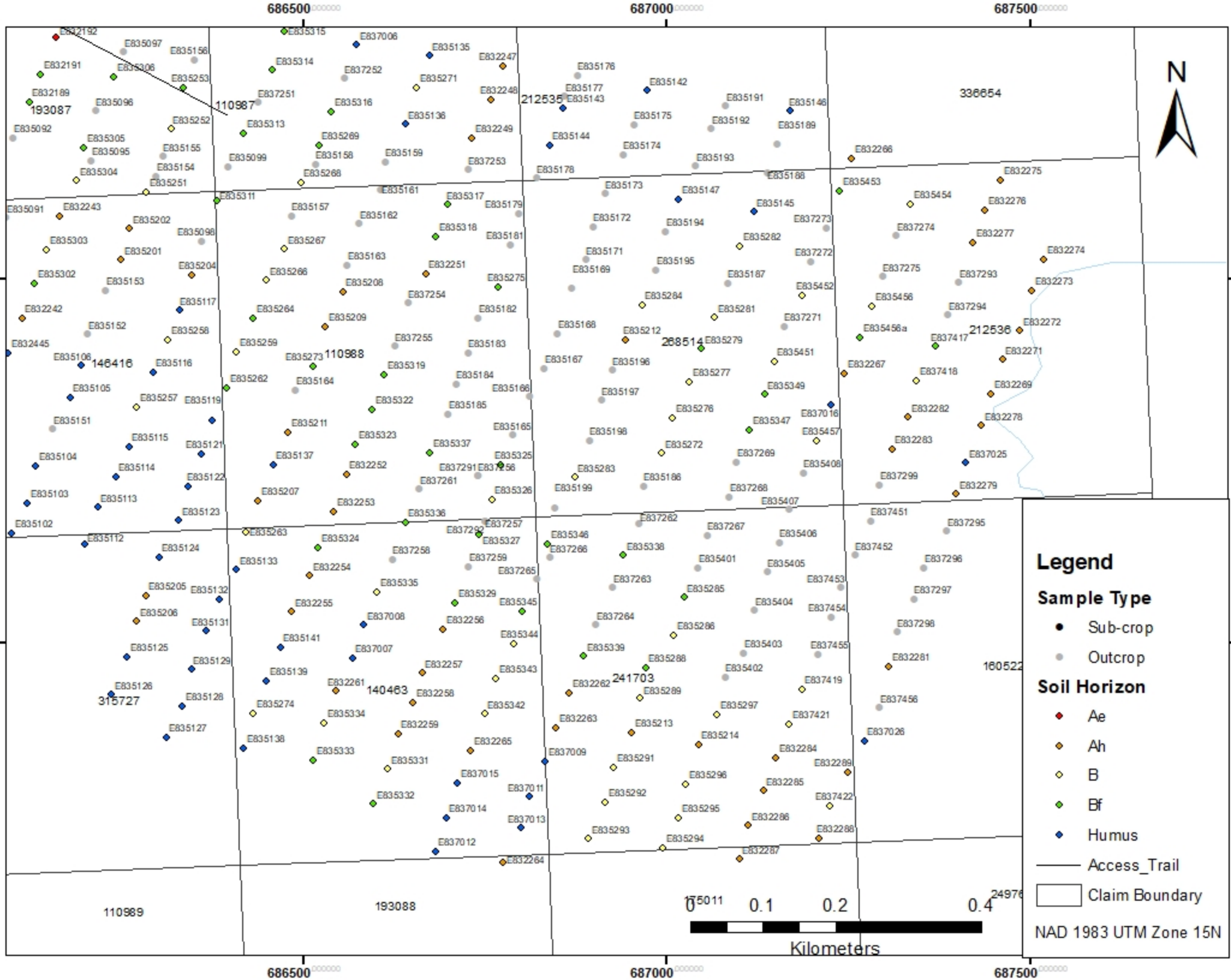




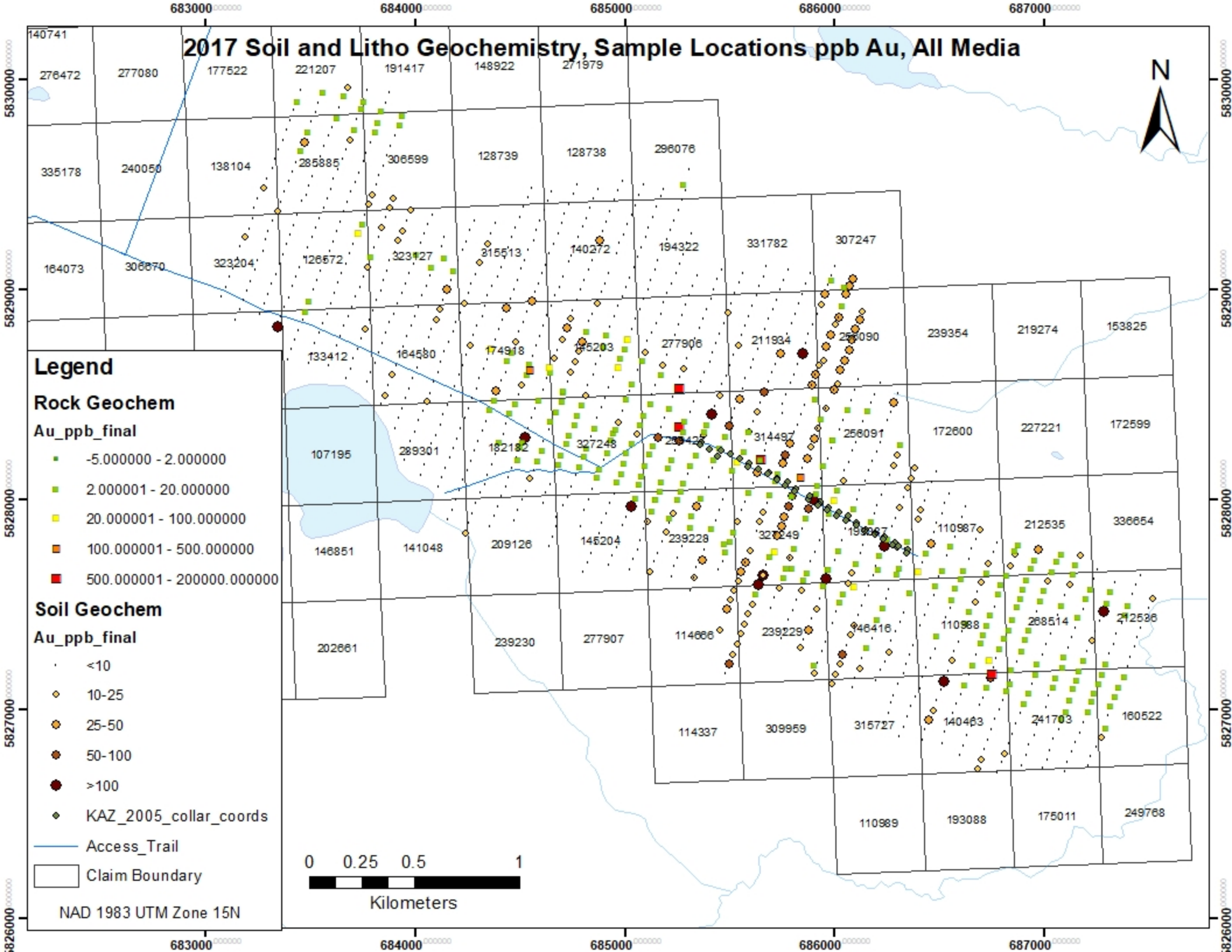








# 2017 Soil and Litho Geochemistry, Sample Locations ppb Au, All Media





# Appendix I – Complete table of samples and results



ER35418	684536	5828595	Mafic Metavolcanic	0.953	09.13.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	16.1	1.65	5.21	6.27	0.07	7.94	0.3	193	349	1500	7.47	1.5	160	1.4	0.7	0.5	0.5	0.025	0.23	48.3	0.46	0.02	0.1	80	12.4	7.2	2	12.9	56	2.6	0.57	0.05	0.5	1.6	0.05	34	7.1	14.1	1.6	6.7	1.7	1.8	0.3	2.2	86.7	0.05	0.2	1.5	0.2	0.2	87.2	2.2	0.0005	0.025	5.9	2.2	0.6			
ER35419	684543	5828643	Banded Iron Formation	254	09.13.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	0.25	0.005	0.64	0.02	0.005	0.05	0.05	2	19.1	1550	13	0.05	2.5	0.05	0.4	0.05	0.5	0.025	0.025	0.025	0.9	0.07	0.01	0.3	10.4	0.3	1.6	0.1	1.2	2	0.05	0.97	0.05	0.5	0.6	0.05	0.5	0.9	1.2	0.1	0.5	0.1	0.2	0.05	0.1	15.7	0.05	0.05	0.2	0.05	0.05	0.3	0.4	0.0005	0.025	0.25	0.05	0.05		
ER35421	684464	5828701	Banded Iron Formation	159	09.14.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.013	13	0.5	0.25	0.005	1.26	0.04	0.005	0.18	0.05	3	29	940	17.4	0.05	1.5	0.05	0.9	0.1	20	0.025	0.15	1.9	0.27	0.01	0.05	4.4	0.6	0.9	0.7	4.4	2	0.1	0.75	0.05	0.5	0.7	0.05	7	2	3.7	0.4	1.6	0.6	0.5	0.05	0.7	4.7	0.05	0.05	0.2	0.05	0.05	1	2	0.0005	0.025	0.25	0.2	0.2	0.05		
ER35422	684442	5828663	Banded Iron Formation	869	09.14.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.005	5	14	0.7	0.005	1.65	0.005	0.005	0.13	0.05	6	14.3	3560	35.4	0.05	1.5	0.3	1	0.05	90	0.025	0.17	6.7	0.24	0.01	0.05	21.1	0.7	1.5	1.1	3.3	2	0.2	0.42	0.05	0.5	2.8	0.05	8	2.9	4.9	0.4	1.7	0.4	0.5	0.05	0.4	2.5	1.1	0.05	0.4	0.05	0.05	0.5	19.7	0.0005	0.025	2.1	0.05	0.05			
ER35423	684138	5829148	Mafic Metavolcanic	0.893	09.16.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	18	8.6	5.8	4.43	6.86	0.33	9.48	0.2	273	421	2590	19.9	0.9	128	1.8	0.2	0.6	40	0.025	0.95	46.4	0.47	0.25	0.05	118	13.4	8.5	6.6	15.3	28	1.3	0.82	0.05	0.5	0.05	0.05	64	1.9	4.7	0.7	4.1	1.2	2	0.3	2.5	107	0.2	0.2	1.8	0.2	0.05	82.9	0.8	0.0005	0.12	1.6	0.2	0.2	0.05		
ER35424	684079	5829105	Mafic Metavolcanic	0.281	09.16.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	15	19.5	0.65	4.39	7.35	0.24	8.63	0.1	192	779	1830	5.82	1.3	387	1.5	0.4	0.5	50	0.025	0.71	69.2	0.53	0.02	0.05	70	13.5	0.8	6	13.9	46	0.2	0.24	0.05	0.5	0.05	0.05	63	5	10.4	1.2	5.7	1.7	1.9	0.3	2.4	44.2	0.2	0.2	1.6	0.2	0.05	69.7	0.3	0.0005	0.19	4.2	2.1	0.3	0.05		
ER35425	684004	5829166	Mafic Metavolcanic	0.354	09.17.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	35.8	0.75	4.43	7.42	0.84	7.47	0.1	269	193	2250	7.84	1.1	94	2	0.3	0.6	30	0.025	2.05	42.5	0.53	0.06	0.05	81.9	13.5	1.6	23	17.7	36	0.5	0.24	0.05	0.5	0.05	0.05	128	2.1	5.5	0.8	4.7	1.4	2.2	0.4	2.7	63.6	0.3	0.3	2	0.3	0.05	55.1	0.2	0.0005	0.16	1.8	0.9	0.2	0.05		
ER35151	686155	5827293	Mafic Metavolcanic.	0.693	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	27	1.72	4.37	7.58	0.09	7.12	0.1	236	683	1400	7.83	0.8	643	2	0.2	0.6	60	0.025	0.38	34.5	0.53	0.07	0.05	91.9	16.6	4.2	2	16.5	29	0.05	0.12	0.05	0.5	0.5	0.05	15	1.3	3.2	0.5	3	1.1	2.1	0.4	2.8	96.2	0.4	0.3	2	0.3	0.05	91.6	0.2	0.0005	0.025	1.7	0.2	0.1	0.05		
ER35152	686203	5827424	Mafic Metavolcanic.	0.862	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.007	7	0.5	7.4	0.23	12	2.78	0.02	5.98	0.05	97	1540	1540	7.33	0.4	783	0.6	0.1	0.2	0.5	60	0.025	0.08	33.3	57.8	0.21	0.06	0.05	72.8	6	59.4	0.4	5.8	14	0.6	0.17	0.05	0.5	0.3	0.05	32	1.4	3.2	0.4	1.9	0.8	0.9	0.1	1	22.7	0.5	0.05	0.7	0.05	0.05	17	0.2	0.0005	0.025	1	0.3	0.05	0.05
ER35153	686228	5827484	Mafic Metavolcanic + Ultramafic Dike	1.02	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.008	8	0.5	8.4	2.23	3.47	6.24	0.09	3.97	0.1	252	28.8	1840	12.3	1.6	676	1.8	0.6	0.6	30	0.025	3.62	40.1	0.71	0.05	0.05	138	14.3	25	4.1	17.6	58	2	0.28	0.05	0.5	0.6	0.05	108	3.5	8	1	5	1.4	2.5	0.4	3.1	96.4	0.5	0.3	2	0.2	0.1	44.9	1	0.0005	0.06	7.3	0.8	0.2	0.05		
ER35154	686297	5827641	Mafic Metavolcanic	0.591	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	9	1.44	5.01	6	0.15	6.96	0.05	180	290	1450	6.93	1.3	135	1.5	0.4	0.5	0.5	0.025	0.46	45	0.42	0.02	0.05	71.5	10.8	2	4.6	12.5	47	2.6	0.65	0.05	0.5	0.6	0.05	95	6.4	12.6	1.4	6.1	1.5	1.8	0.3	2.1	63.4	0.5	0.2	1.4	0.2	0.2	68.6	1.8	0.0005	0.025	3.8	2.3	1.1	0.05		
ER35155	686306	5827668	Mafic Metavolcanic	0.41	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.011	11	0.5	8.9	3.39	6.23	3.31	0.08	4.26	0.05	108	436	2700	19.5	0.5	217	1.6	0.9	0.5	0.5	0.2	0.66	36.6	0.64	0.01	0.8	93.7	7.2	41.4	1.7	15	20	1.1	0.36	0.05	0.5	5.8	0.05	9	4	8.4	1	4.8	1.4	1.8	0.3	2.1	59.9	0.05	0.3	1.8	0.2	0.05	137	3.2	0.0005	0.025	22.1	0.6	0.3	0.05		
ER35156	686349	5827801	Mafic Metavolcanic	0.329	09.06.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.01	10	0.5	7	2.45	3.59	7.21	0.08	4.64	0.1	310	79.1	1550	10.6	2.4	86.8	2.8	0.6	1	0.5	0.025	0.67	43.8	0.83	0.02	0.3	131	17.9	0.4	0.5	26.5	85	2.3	0.19	0.05	0.5	0.2	0.05	24	4	10.5	1.5	7.4	2.5	3.4	0.6	4.4	55.3	0.3	0.4	3.3	0.4	0.1	138	0.2	0.0005	0.025	2.1	1.1	0.3	0.05		
ER35157	686483	5827587	Mafic Metavolcanic	1.16	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	21.1	0.65	7.89	5.59	0.35	7.25	0.05	166	738	1600	7.67	0.8	372	1.2	0.2	0.3	10	0.025	0.81	56.3	0.38	0.02	0.05	76.4	10.3	13.7	13.6	9.5	30	1.2	0.29	0.05	0.5	0.3	0.05	97	4	7.2	0.8	3.8	0.8	1.4	0.2	1.5	49.3	0.6	0.1	1.1	0.2	0.05	79.2	0.4	0.0005	0.06	1.3	0.7	0.2	0.05		
ER35158	686516	5827658	Mafic Metavolcanic	0.669	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.011	11	14	7.8	0.26	9.31	3.73	0.05	7.87	1	140	2250	1520	8.83	0.9	381	1.1	0.5	0.4	50	0.025	0.17	61.6	0.61	0.28	3.5	37.4	11.1	21.3	1.1	10	35	0.9	1.41	0.2	2	0.3	0.2	19	7.6	14.6	1.5	6.7	1.6	1.9	0.3	1.7	116	0.6	0.2	1.1	0.2	0.05	35.5	0.05	0.001	0.05	6.7	1.3	0.4	0.05		
ER35159	686612	5827661	Mafic Metavolcanic	0.598	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	4	10.6	1.05	6.19	4.32	0.11	9.84	0.05	175	694	1940	10.4	0.8	230	1.6	0.4	0.5	60	0.025	0.18	59.5	0.51	0.11	0.05	112	10.4	2.5	1.4	12.7	27	0.05	0.07	0.05	0.5	0.05	0.05	53	1.9	5.5	0.7	4.5	1.2	1.9	0.3	2.1	44.8	0.2	0.2	1.4	0.2	0.05	64.3	0.05	0.0005	0.025	2.1	0.5	0.2	0.05		
ER35161	686606	5827622	Mafic Metavolcanic	7	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.009	9	0.5	5.7	1.09	12.1	6.21	0.01	5.16	0.2	97	1920	1750	10.2	0.6	672	0.9	0.2	0.3	20	0.025	0.32	71.9	0.23	0.11	0.05	111	6.4	2.5	1.4	12.7	27	0.05	0.07	0.05	0.5	0.05	0.05	53	1.9	5.5	0.7	4.5	1.2	1.9	0.3	2.1	44.8	0.2	0.2	1.4	0.2	0.05	64.3	0.05	0.0005	0.025	2.1	0.5	0.2	0.05		
ER35162	686576	5827576	Mafic Metavolcanic	1.45	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.005	5	0.5	30.6	1.96	3.22	7.82	0.4	7.58	0.5	292	74.6	1520	9.8	1.9	728	1.7	0.7	1	20	0.025	0.34	36.8	0.84	0.04	0.05	203	18.7	0.05	10.5	25.8	73	0.2	0.11	0.1	0.5	0.1	0.05	163	7.8	16.2	2	10.4	2.5	3.8	0.6	4.2	239	0.05	0.4	3.1	0.4	0.05	105	0.05	0.0005	0.07	4.7	1.1	0.3	0.05		
ER35163	686560	5827519	Mafic Metavolcanic	0.437	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.019	19	1	13.8	1.94	5.83	6.89	0.13	5.5	0.05	214	320	1420	8.05	1.5	130	2.5	0.4	0.5	10	0.025	0.33	48.9	0.49	0.03	0.2	78.2	13	0.3	3.7	14.8	59	1.9	0.6	0.05	0.5	0.2	0.05	89	4.1	9.1	1	4.8	1.7	2.1	0.2	4.3	52.7	0.5	0.2	1.6	0.2	0.1	75.1	0.3	0.0005	0.025	2.7	2.3	0.6	0.05		
ER35164	686489	5827347	Banded Iron Formation	0.532	09.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.01	10	0.5	13	0.04	1.55	0.24	0.01	0.34	0.1	11	36.6	1920	16.9	0.1	8.5	0.7	1.1	0.3	0.5	0.08	0.39	6.7	0.46	0.06	0.7	132	2.5	54.6	0.4	7.1	6	0.4	1.55	0.05	0.5	1.9	0.2	2.5	2.9	5.8	0.7	3	0.8	1	0.1	0.9	91.6	0.05	0.8	0.05	0.05	1.7	4	0.0005	0.025	1.3	0.3	0.1	0.05			
ER35165	686787	5827285	Mafic Metavolcanic	0.753	09.09.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	9.1	2.29	2.85	7.1	0.14	6	0.5	200	79.8	1840	8.45	1																																																







E837327	687700	S829818	BF	25	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	17	18.5	2.29	0.51	6.03	1.5	1.55	0.1	57	57.8	278	2.59	4.7	17.9	0.8	1.2	0.2	60	0.025	1.37	5.6	0.51	0.11	0.05	32.3	13.9	0.7	45.7	7.6	195	7	0.41	0.05	0.5	0.2	0.05	505	9.4	20.1	2.3	8.9	1.4	1.6	0.2	1.5	4.7	0.05	0.1	0.8	0.1	0.4	240	0.5	0.0005	0.28	13.7	4.1	0.8	
E837328	683683	S828873	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	13	19.28	2.13	0.68	6.41	1.41	1.6	0.05	54	53.6	11.8	2.9	1.5	26.3	1	1.3	0.3	60	0.025	1.24	8.8	0.55	0.11	0.05	38.6	13.3	0.05	41.1	9.5	102	4.5	0.37	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.6	8.9	0.05	0.2	1	0.2	0.8	237	0.2	0.0005	0.25	13.4	7.4	1.6	
E837329	683683	S828873	BF	15	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.008	8	0.5	4.23	2.12	0.78	8.51	1.26	1.47	0.1	64	47	382	4.1	0.2	29.1	0.9	1.4	0.3	90	0.13	2.34	10.2	0.48	0.18	0.05	96.5	20.1	0.05	41.3	52.8	7.9	17	0.6	0.21	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.4	16.9	0.2	0.1	0.9	0.1	0.05	221	0.05	0.0005	0.32	18	7.1	1.4
E837330	683683	S828873	BF	10	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	36.27	2.07	0.84	6.97	1.37	1.66	0.05	62	67.1	40.6	2.8	0.3	33.7	0.9	1.3	0.3	50	0.16	2.46	13.1	0.61	0.16	0.05	76.5	16.4	1	0.5	62.7	8.9	14.7	0.6	0.21	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.7	14.0	0.05	0.1	1	0.1	0.05	227	0.05	0.0005	0.34	14.9	7.5	1.4
E837331	683683	S828873	BF	5	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	31.22	2.02	0.81	6.97	1.37	1.66	0.05	50	52.9	32.9	1.6	0.3	33.7	0.9	1.3	0.3	50	0.16	2.46	13.1	0.61	0.16	0.05	76.5	16.4	1	0.5	62.7	8.9	14.7	0.6	0.21	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.7	14.0	0.05	0.1	1	0.1	0.05	227	0.05	0.0005	0.34	14.9	7.5	1.4
E837332	683683	S828873	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	31.22	2.02	0.81	6.97	1.37	1.66	0.05	50	52.9	32.9	1.6	0.3	33.7	0.9	1.3	0.3	50	0.16	2.46	13.1	0.61	0.16	0.05	76.5	16.4	1	0.5	62.7	8.9	14.7	0.6	0.21	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.7	14.0	0.05	0.1	1	0.1	0.05	227	0.05	0.0005	0.34	14.9	7.5	1.4
E837333	683683	S828873	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	31.22	2.02	0.81	6.97	1.37	1.66	0.05	50	52.9	32.9	1.6	0.3	33.7	0.9	1.3	0.3	50	0.16	2.46	13.1	0.61	0.16	0.05	76.5	16.4	1	0.5	62.7	8.9	14.7	0.6	0.21	0.05	0.5	0.05	0.05	448	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.7	14.0	0.05	0.1	1	0.1	0.05	227	0.05	0.0005	0.34	14.9	7.5	1.4
E837334	683591	S828639	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	46.8	1.57	0.87	8.02	1.98	1.75	0.2	123	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837335	683591	S828639	BF	15	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837336	683591	S828639	BF	10	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837337	683591	S828639	BF	5	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837338	683591	S828639	BF	15	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837339	683591	S828639	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837340	683591	S828639	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837341	683591	S828639	BF	15	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837342	683591	S828639	BF	10	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837343	683591	S828639	BF	5	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837344	683591	S828639	BF	20	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837345	683591	S828639	BF	15	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837346	683591	S828639	BF	10	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1	0.3	0.05	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9	40.7	0.05	0.2	1.2	0.2	0.7	185	1	0.0005	0.25	19.1	11.8	1.4	
E837347	683591	S828639	BF	5	09.18.2017	UT4-Total Digestion ICP/MS - 30g FA	0.0025	2.5	0.5	41.5	2.14	0.78	8.02	1.98	1.75	0.2	113	127	623	5.68	4.4	34.6	1.3	1.4	0.4	60	0.025	2.38	15.1	0.81	0.19	0.05	82.7	19.8	3	44.9	10.2	17.1	9.5	0.83	0.05	1																									







ESK3272	685951	ES28975	BF	30	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.038	38	0.5	41.3	2.01	0.99	9.06	1.41	1.94	0.1	73	106	556	579	6.1	44.1	1.3	1.5	0.4	90	0.025	2.09	14.3	0.61	0.27	0.5	45.9	18.6	0.6	45.2	10.3	266	0.1	0.15	0.05	0.5	0.05	0.05	0.05	399	13	26.6	3.1	11.1	2.3	2.1	0.3	2	172	0.05	0.2	1.2	0.2	0.05	247	0.05	0.0005	0.3	18.3	8	2.6	
ESK3278	685781	ES29002	BF	40	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	7.74	1.96	1.56	7.76	1.1	3.02	0.1	56	88.1	800	525	3.4	7.1	1.9	1.1	0.6	60	0.025	2.63	22.6	1.08	0.2	0.7	76.4	17.4	0.05	47.6	18.2	15.1	0.05	0.11	0.05	0.5	0.05	0.05	0.05	396	45.3	103	9.7	33.7	5.2	4.6	0.6	3.8	4.59	0.05	0.3	1.8	0.2	0.05	265	0.05	0.0005	0.45	13.5	15.7	2.8	
ESK3279	685759	ES29006	BF	30	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	35.7	2.06	1.48	7.67	1.27	2.41	0.05	50	144	564	431	4.7	48.6	1.1	1.1	0.4	40	0.025	1.81	16.1	0.54	0.22	0.3	74.5	17.7	0.05	37.5	9.7	199	0.2	0.2	0.05	0.5	0.05	0.05	0.05	398	18	34.8	3.9	14.2	2.1	2.2	0.3	1.9	15.4	0.1	0.2	1.1	0.2	0.05	255	0.05	0.0005	0.27	15.4	7.4	1.2	
ESK3343	685740	ES29000	B	20	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	31.4	2.1	2.19	8.68	1.46	3.21	0.1	94	171	1040	663	3.4	62.2	1.4	1.1	0.4	70	0.025	2.72	27.5	0.53	0.4	0.3	68	23	1.5	48.8	11	143	0.3	0.36	0.05	0.5	0.05	0.05	0.05	394	10	30.4	2.3	8.6	1.8	1.9	0.2	2	39.7	0.2	0.2	1.3	0.2	0.05	237	0.05	0.0005	0.33	15.1	5.4	1.4	
ESK3342	685732	ES29003	B	20	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	11.4	1.97	1.24	1.98	0.1	62	102	492	348	2.5	76.2	0.1	0.1	0.1	0.1	0.1	40	0.025	1.88	16.3	0.77	0.1	0.1	68	23	1.5	48.8	11	143	0.3	0.36	0.05	0.5	0.05	0.05	0.05	394	10	30.4	2.3	8.6	1.8	1.9	0.2	2	39.7	0.2	0.2	1.3	0.2	0.05	237	0.05	0.0005	0.33	15.1	5.4	1.4	
ESK3343	685710	ES29003	B	25	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	31	2.17	1.97	1.94	1.52	2.23	0.1	64	103	435	456	2.4	40	1	1.5	0.3	110	0.025	2.75	12.1	0.56	0.48	0.9	68	29	1.5	52.6	8.4	103	0.1	0.18	0.05	0.5	0.05	0.05	0.05	442	10	25.5	2.9	10.5	1.9	1.8	0.2	1	0.1	0.05	271	0.05	0.0005	0.32	19.9	9.9	1.6					
ESK3734	685685	ES28860	B	40	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	34.1	2.16	1.58	8.73	1.34	2.73	0.05	73	112	668	489	3.4	49.2	1.4	1.4	0.4	60	0.025	1.88	16.3	0.77	0.17	0.6	48.3	18.4	0.5	42	11.7	148	2.2	0.3	0.05	0.5	0.05	0.05	0.05	372	23.5	47.1	5.5	19.3	3.2	2.9	0.4	2.3	14.7	0.05	0.2	1.3	0.2	0.05	240	0.1	0.001	0.27	14.3	8.7	1.4	
ESK3735	685681	ES28861	B	30	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	74.5	2.22	1.67	8.75	1.48	2.34	0.05	81	130	643	598	3.6	59.2	1.1	1.4	0.4	60	0.025	1.56	21.3	0.58	0.35	0.3	70.5	23.8	1.2	59.2	10.3	157	0.8	0.51	0.05	0.5	0.05	0.05	0.05	436	12.2	23.9	2.7	10.8	1.9	2	0.3	1.9	20.7	0.05	0.2	1.2	0.2	0.05	231	0.05	0.0005	0.44	17.9	5	1.5	
ESK3736	685680	ES28862	BF	25	10.06.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	40.1	2.96	1.64	7.88	1.47	1.67	0.05	127	141	589	565	3.2	76.2	0.1	0.1	0.1	110	0.025	1.88	16.3	0.77	0.17	0.6	48.3	18.4	0.5	42	11.7	148	2.2	0.3	0.05	0.5	0.05	0.05	0.05	436	12.2	23.9	2.7	10.8	1.9	2	0.3	1.9	20.7	0.05	0.2	1.2	0.2	0.05	231	0.05	0.0005	0.44	17.9	5	1.5	
ESK3737	685422	ES29007	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	38.1	2.44	1.67	8.75	1.48	2.34	0.05	127	141	589	565	3.2	76.2	0.1	0.1	0.1	110	0.025	1.88	16.3	0.77	0.17	0.6	48.3	18.4	0.5	42	11.7	148	2.2	0.3	0.05	0.5	0.05	0.05	0.05	436	12.2	23.9	2.7	10.8	1.9	2	0.3	1.9	20.7	0.05	0.2	1.2	0.2	0.05	231	0.05	0.0005	0.44	17.9	5	1.5	
ESK3738	685426	ES29008	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	6	38.1	2.44	1.67	8.75	1.48	2.34	0.05	127	141	589	565	3.2	76.2	0.1	0.1	0.1	110	0.025	1.88	16.3	0.77	0.17	0.6	48.3	18.4	0.5	42	11.7	148	2.2	0.3	0.05	0.5	0.05	0.05	0.05	436	12.2	23.9	2.7	10.8	1.9	2	0.3	1.9	20.7	0.05	0.2	1.2	0.2	0.05	231	0.05	0.0005	0.44	17.9	5	1.5
ESK3739	685426	ES29009	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	21	1.03	8.27	1.76	1.82	1.05	56	146	475	339	4.4	36.2	0.9	1.4	0.3	70	0.025	1.82	12.5	0.5	0.17	0.3	32.8	17.3	0.05	50.8	7.5	184	0.1	0.21	0.05	0.5	0.05	0.05	0.05	495	10.2	20.7	2.4	9.1	1.5	1.6	0.2	1.6	10.5	0.05	0.1	0.9	0.1	0.05	260	0.05	0.0005	0.31	15.4	4.5	1		
ESK3740	685412	ES28953	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	35	2.9	1.52	9.13	1.86	2.45	0.2	67	108	578	467	3	48.7	1	1.3	0.3	50	0.025	3.62	15.5	0.46	0.48	0.4	54.1	23.6	1.9	67.2	8	129	1.3	0.24	0.05	0.5	0.05	0.05	0.05	478	7.8	16	1.8	6.5	1.3	1.4	0.2	1.6	12.3	0.2	0.1	1	0.1	0.05	283	0.1	0.0005	0.39	15.7	4.5	1.2	
ESK3741	685402	ES28956	B	50	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	13.1	2.44	0.91	6.44	1.45	2.37	0.05	21	98.3	484	272	4.7	23.4	1.1	1.1	0.4	40	0.025	0.63	8.2	0.09	0.11	0.4	26.9	14.6	0.05	38.1	10.7	201	0.1	0.13	0.05	0.5	0.05	0.05	0.05	453	15.8	32.8	3.9	14.8	2.3	1.3	0.2	2	0.1	0.05	0.2	1.2	0.2	0.05	215	0.05	0.0005	0.22	12.3	5.3	1.1	
ESK3742	685402	ES28957	B	40	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	10.7	2.2	1.47	6.48	1.41	2.05	0.1	44	108	494	329	4.7	23.4	1.1	1.1	0.4	40	0.025	0.63	8.2	0.09	0.11	0.4	26.9	14.6	0.05	38.1	10.7	201	0.1	0.13	0.05	0.5	0.05	0.05	0.05	453	15.8	32.8	3.9	14.8	2.3	1.3	0.2	2	0.1	0.05	0.2	1.2	0.2	0.05	215	0.05	0.0005	0.22	12.3	5.3	1.1	
ESK3743	685402	ES28958	B	40	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	10.7	2.2	1.47	6.48	1.41	2.05	0.1	44	108	494	329	4.7	23.4	1.1	1.1	0.4	40	0.025	0.63	8.2	0.09	0.11	0.4	26.9	14.6	0.05	38.1	10.7	201	0.1	0.13	0.05	0.5	0.05	0.05	0.05	453	15.8	32.8	3.9	14.8	2.3	1.3	0.2	2	0.1	0.05	0.2	1.2	0.2	0.05	215	0.05	0.0005	0.22	12.3	5.3	1.1	
ESK3744	685402	ES28959	B	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	56.2	2.3	1.67	7.95	1.48	2.64	0.05	37	113	678	521	2.6	64.7	1.3	1.3	0.4	50	0.025	2.52	21.9	0.66	0.25	0.4	69.7	18.6	0.3	56.9	11.7	106	0.2	0.14	0.05	0.5	0.05	0.05	0.05	480	13.5	30.2	1.7	12.2	2.2	2.4	0.3	2.4	2.2	0.05	0.2	1.3	0.2	0.05	267	0.05	0.0005	0.39	15.7	5.6	1.6	
ESK3744	685425	ES28983	BF	10	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	76.5	2.5	1.82	6.48	1.41	2.05	0.1	35	264	447	789	1.9	107	1	2.9	0.4	50	0.025	2.56	19.1	0.59	0.28	0.4	69.7	18.6	0.3	56.9	11.7	106	0.2	0.14	0.05	0.5	0.05	0.05	0.05	480	13.5	30.2	1.7	12.2	2.2	2.4	0.3	2.4	2.2	0.05	0.2	1.3	0.2	0.05	267	0.05	0.0005	0.39	15.7	5.6	1.6	
ESK3745	685444	ES29033	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	25.4	2.82	1	8.84	1.36	2.5	0.05	37	58.6	447	385	2.5	29.4	0.8	1.3	0.3	50	0.025	3.62	15.5	0.46	0.48	0.4	54.1	23.6	1.9	67.2	8	129	1.3	0.24	0.05	0.5	0.05	0.05	0.05	478	7.8	16	1.8	6.5	1.3	1.4	0.2	1.6	12.3	0.2	0.1	1	0.1	0.05	283	0.1	0.0005	0.39	15.7	4.5	1.2	
ESK3746	685444	ES29034	BF	20	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	14.7	2.37	1.45	6.48	1.41	2.05	0.1	44	108	494	329	4.7	23.4	1.1	1.1	0.4	40	0.025	0.63	8.2	0.09	0.11	0.4	26.9	14.6	0.05	38.1	10.7	201	0.1	0.13	0.05	0.5	0.05	0.05	0.05	453	15.8	32.8	3.9	14.8	2.3	1.3	0.2	2	0.1	0.05	0.2	1.2	0.2	0.05	215	0.05	0.0005	0.22	12.3	5.3	1.1	
ESK3747	685444	ES29035	BF	25	10.07.2017	UT4-Total Digestion CPMS + 30g FA	0.025	2.5	0.5	76.5	2.5	1.82	6.48	1.41	2.05	0.1	35	264	447	789	1.9	107	1	2.9	0.4	50	0.025	2.56	19.1	0.59	0.28	0.4	69.7	18.6	0.3	56.9	11.7	106	0.2	0.14	0.05	0.5	0.05	0.05	0																							

Sample	Easting	Northing		Depth (cm)	Date	Analytical method	g/t Au	ppb_Au	ppm B	ppm Li	% Na	% Mg	% Al	% K	% Ca	ppm Cd	ppm V	ppm Cr	ppm Mn	% Fe	ppm Hf	ppm Ni	ppm Er	ppm Be	ppm Ho	ppb Hg	ppm Ag	ppm Cs	ppm Co	ppm Eu	ppm Bi	ppm Se	ppm Zn	ppm Ga	ppm As	ppm Rb	ppm Y	ppm Zr	ppm Nb	ppm Mo	ppm In	ppm Sn	ppm Sb	ppm Te	ppm Ba	ppm La	ppm Ce	ppm Pr	ppm Nd	ppm Sm	ppm Gd	ppm Tb	ppm Dy	ppm Cu	ppm Ge	ppm Tm	ppm Yb	ppm Lu	ppm Ta	ppm Sr	ppm W	ppm Re	ppm Tl	ppm Pb	ppm Th	ppm U
E832161	686105	5828272	Ae	80	08.26.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	11	25	2.64	1.13	6.83	1.7	2.38	0.05	69	87.9	447	2.48	3.7	45.3	1	1.1	0.3	50	0.025	5.7	9.9	0.69	0.36	0.05	46.8	10.6	0.3	51.9	11.4	152	3.1	0.94	0.05	1	0.05	0.05	486	19.8	38.7	4.5	16.5	3.4	2.4	0.3	1.9	25.1	0.05	0.2	1	0.1	0.05	251	0.4	0.0005	0.36	13.1	7.3	1.3
E832165	686220	5828552	Ae	80	08.26.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	16.8	2.2	0.95	5.9	1.55	2.65	0.05	41	69.8	431	1.82	2.1	28.1	1.1	1	0.4	60	0.025	1.6	7.7	0.75	0.12	0.05	53.8	10.4	0.05	51	12.4	110	0.1	0.16	0.05	0.5	0.05	0.05	439	19.3	37.2	4.3	16.6	3	2.5	0.3	1.9	4.9	0.05	0.2	1.1	0.2	0.05	240	0.05	0.0005	0.35	12.4	12.9	2
E832167	686255	5828374	Ae	55	08.26.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	55.1	1.91	1.51	7.06	3.57	1.38	0.05	20	37.4	771	2.64	1.7	16	0.3	0.7	0.1	0.5	0.025	2.06	11.9	0.38	0.17	0.05	76.7	22.9	2.3	66.7	4	67	0.4	0.14	0.05	0.5	0.05	0.05	500	5	9	1	3.7	0.7	0.1	0.7	8.9	0.1	0.1	0.4	0.05	123	0.05	0.0005	0.38	10.9	2.7	0.8		
E832168	686165	5828135	Ae	100	08.27.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	47.7	2.58	2.05	7.15	0.58	2.82	0.05	52	206	859	3.12	3.9	113	1.2	0.8	0.4	20	0.025	1.92	21.4	0.51	0.23	0.05	56.8	15.9	0.5	18.4	12.9	160	1.4	0.23	0.05	0.5	0.05	0.05	183	9.7	24.3	2.2	7.6	1.6	1.7	0.3	1.9	16.8	0.2	0.2	1.3	0.2	0.05	141	0.05	0.0005	0.12	10.3	4.2	1.5
E832182	685853	5827330	Ae	25	08.27.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	5.6	4.5	0.64	8.15	1.46	2.72	0.05	49	52.5	351	1.81	8.1	27.7	0.9	1.2	0.4	40	0.025	0.56	5.1	0.4	0.16	0.05	24.4	11.3	0.2	24.2	11.1	311	2.6	1.73	0.05	2	0.05	0.05	968	4.1	9.1	1.3	6.3	1.9	1.7	0.3	1.6	1.1	0.05	0.1	0.9	0.2	0.1	366	0.2	0.0005	0.18	9.9	8.4	1.6
E832184	685941	5827274	Ae	100	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	34.4	2.25	1.43	7.44	1.46	2.4	0.05	39	100	531	2.96	3.4	60.9	1.4	1.1	0.5	50	0.025	2.23	16.2	0.89	0.2	0.05	67.4	10.9	5.6	56	15.8	136	0.2	0.13	0.05	0.5	0.05	0.05	502	25.2	49.3	5.5	20.3	3.5	3.1	0.4	2.6	32.8	0.05	0.2	1.4	0.2	0.05	216	0.05	0.001	0.36	15.4	7.2	1.5
E832185	685959	5827319	Ae	110	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	26.1	2.04	1.11	6.12	1.78	3.8	0.05	37	49.9	356	1.68	2.5	28	1.1	1.3	0.4	50	0.025	1.69	8.3	0.85	0.16	0.1	39.1	7.3	3.7	53.5	13.7	102	0.2	0.1	0.05	0.5	0.05	0.05	541	24.9	48.7	5.5	20.9	3.8	2.8	0.4	2.2	46	0.05	0.2	1.1	0.2	0.05	235	0.05	0.001	0.38	13.4	7.4	1.8
E832186	685969	5827365	Ae	110	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	14.9	1.97	1.66	5.74	1.33	4.38	0.05	44	48.3	367	1.64	4.5	23.7	1.2	1.1	0.4	50	0.025	1.16	6.8	0.8	0.17	0.05	33.6	5.7	0.9	38.2	13.4	184	2	0.27	0.05	1	0.05	0.05	514	23.1	47.3	5.3	20.3	3.3	2.8	0.4	2.3	9.3	0.05	0.2	1.2	0.2	0.1	246	0.1	0.0005	0.32	12.7	6.6	1.5
E832188	686082	5827646	Ae	45	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.016	16	7	16.1	4.5	1.47	5.34	0.25	3.49	0.1	210	99.2	1750	5.52	3	53.2	1	0.7	0.3	0.5	0.025	0.62	31.7	0.23	0.11	0.05	87.2	20.4	32.4	1.5	6.9	118	7.5	1.7	0.05	1	0.2	0.1	135	0.7	2	0.3	1.3	0.4	0.7	0.2	1.2	48.4	0.1	0.2	1.1	0.2	0.8	85.9	60.1	0.003	0.07	4.4	0.6	0.4
E832192	686160	5827833	Ae	50	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	27.2	2.67	0.99	7.23	1.41	2.17	0.05	33	60.4	394	2.46	3.9	29.3	1.1	1.1	0.3	40	0.025	2.51	7.9	0.62	0.27	0.05	38	15.8	1.2	43.7	11.1	161	0.1	0.025	0.05	0.5	0.05	0.05	505	11.4	22.9	2.6	10.1	2.1	1.9	0.3	1.8	6.8	0.05	0.2	1.1	0.2	0.05	244	0.05	0.0005	0.36	17.5	5.5	1.3
E832195	686225	5828022	Ae	45	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	54.4	1.9	1.06	7.06	1.47	2.35	0.2	43	80.5	653	3.29	2.8	96.6	1.6	1.3	0.6	30	0.025	4.02	15.5	0.99	0.3	0.05	59.1	13.5	43.3	65.5	18.9	115	0.3	0.2	0.05	0.5	0.05	0.05	453	36.2	49.6	7.3	26.4	5.1	3.9	0.5	2.9	91.2	0.05	0.2	1.6	0.2	0.05	192	0.05	0.001	0.69	15.7	11.3	23.8
E832197	686262	5828115	Ae	100	08.28.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	0.5	9.5	4.5	0.96	7.22	0.79	3.03	0.05	22	57.7	591	1.59	2.6	32.2	0.8	1	0.2	20	0.025	2.35	7	0.29	0.19	0.05	35.4	9.4	0.05	16.5	8.1	108	0.4	0.2	0.05	0.5	0.05	0.05	603	5	8.8	1.1	4.2	0.8	0.9	0.1	1.1	8.3	0.3	0.1	0.8	0.1	0.05	164	0.1	0.0005	0.15	10.4	2.9	1
E821023	684923	5829077	Ae	120	10.12.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.0025	2.5	9	17	1.62	2.24	5.26	1.63	7.74	0.05	42	62	386	1.95	3.5	20.5	1.1	1.2	0.4	60	0.025	1.37	7.3	0.66	0.09	0.3	32.8	11.4	0.4	48.8	9.9	139	7.6	0.43	0.05	0.5	0.2	0.05	479	21.5	42.9	4.9	18.6	3	2.6	0.3	2.1	9.6	0.05	0.2	1	0.1	0.5	251	0.5	0.0005	0.35	12.5	7	1.3
E832101	685596	5827751	Ae	60	07.09.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.016	16	7	64.8	1.68	1.38	6.87	1.28	1.8	0.05	65	117	565	3.65	3.1	60.3	0.9	1.2	0.4	50	0.025	4.9	20.2	0.51	0.24	0.05	60.1	16.5	4.9	54.5	8.9	124	0.05	0.18	0.05	0.5	0.05	0.05	346	11.3	22.6	2.4	9.2	1.6	1.8	0.3	1.5	26.4	0.05	0.1	1	0.2	0.05	163	0.05	0.0005	0.29	15.7	4.3	1.3
E832102	685857	5828451	Ae	15	07.08.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.009	9	0.5	8	2.67	0.43	7.03	1.65	1.75	0.05	30	39.4	270	1.29	3.7	15.2	0.6	1.2	0.3	40	0.025	1.51	4.7	0.4	0.14	0.3	16.8	17.1	0.05	40.2	6.4	154	0.05	0.09	0.05	0.5	0.05	0.2	441	6.8	13.8	1.5	6.1	1.3	1.1	0.2	0.9	2.4	0.05	0.1	0.8	0.1	0.05	276	0.05	0.0005	0.26	11.7	2.6	1.2
E832103	685657	5827636	Ae	10	07.10.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.148	148	0.5	22	1.94	0.91	6.39	1.37	1.81	0.05	89	106	516	3.85	0.6	41.5	0.9	1	0.4	70	0.025	2.45	12.2	0.49	0.5	0.4	40	20.1	14.7	46	8.6	55	0.05	0.025	0.05	0.5	0.05	0.05	360	9.1	17.7	2	7.5	1.2	1.4	0.2	1.3	11.7	0.05	0.1	1	0.2	0.05	188	0.05	0.0005	0.3	14.8	3.7	1.1
E832104	685675	5827689	Ae	5	07.10.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.01	10	0.5	9.9	2.11	0.67	5.99	1.43	1.7	0.05	42	95.5	469	2.15	3	26.2	0.7	1	0.3	50	0.025	1.56	7.5	0.53	0.23	0.2	24.8	15.3	3.2	36.4	7.4	132	0.05	0.025	0.05	0.5	0.05	0.3	372	9	18.4	2.1	7.5	1.7	1.5	0.2	1.4	5	0.05	0.1	0.9	0.2	0.05	205	0.05	0.0005	0.24	13	3.6	1.2
E832105	685780	5827963	Ae	10	07.10.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.008	8	0.5	15.8	2.22	0.63	6.84	1.47	1.67	0.05	21	66.2	376	2.45	1.1	26.2	0.8	1.1	0.3	30	0.025	1.29	7.9	0.51	0.23	0.05	27	19.6	0.8	38.4	8.2	65	0.05	0.025	0.05	0.5	0.05	0.05	413	9.9	18.8	2.2	7.7	1.5	1.6	0.2	1.4	14	0.05	0.1	0.9	0.1	0.05	226	0.05	0.0005	0.27	14.4	4	1.3
E832106	685816	5828060	Ae	5	07.10.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.01	10	0.5	8.2	2.67	1.56	7.1	1.1	2.65	0.05	41	111	837	3.79	2.4	43.3	1.2	0.9	0.5	20	0.025	1.54	15.7	0.47	0.17	0.05	48.9	16.5	0.2	33.9	11.5	97	0.05	0.025	0.05	0.5	0.05	0.05	301	6.3	13	1.5	5.6	1.2	1.9	0.3	1.7	4.8	0.1	0.2	1.4	0.2	0.05	179	0.05	0.0005	0.18	9.5	3.5	1
E832107	685920	5828337	Ae	35	07.10.2017	UT-4 Total Digestion ICP/MS + 30g FA	0.007	7	0.5	16.2	2.57	0.57	7.08	1.63	2	0.05	14	66.8	405	1.94	2.5	19.7	0.8	1	0.3	20	0.025	4.28	7.1	0.65	0.17	0.2	31.2	16.1	0.05	61.5	8.9	109	0.05	0.025	0.05	0.5	0.05	0.05	443	14.3	28.2	3.2	11.5	2.2	2.3	0.3	1.4	6	0.05	0.1	1	0.1	0.05	279	0.05					











## Appendix II – Assay Certificates



**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07437  
**Invoice Date:** 09-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

16 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 13-Conductivity Conductivity  
Code 13-Paste pH Paste pH  
Code 7-Bioleach Bioleach ICPMS  
Code 7-Cold Hydrox Cold Hydroxylamine Leach  
Code 7-Na Pyro Leach Na Pyrophosphate Leach-ICP/MS  
Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A17-07437**

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:

Assays are recommended for values above the upper limit. The Au from AR-MS is only semi-quantitative. For accurate Au data, fire assay is recommended.

Values obtained in the QC page are from selective extractions. Certified values are not obtained through sequential extractions

CERTIFIED BY:



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Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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E-MAIL [Ancaster@actlabs.com](mailto:Ancaster@actlabs.com) ACTLABS GROUP WEBSITE [www.actlabs.com](http://www.actlabs.com)



	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	117	767	526	6	197	< 0.2	46.2	< 0.05	1060	8.76	< 0.1	74	4.95	21.0	25.7	6	2.73	46.3	3.48	2.15	0.75	31.0	3.14
E832202	179	741	65	6	224	0.3	94.8	< 0.05	656	21.0	< 0.1	54	5.25	55.3	26.2	6	3.40	73.9	18.2	11.4	3.01	19.7	16.1
E832203	229	854	67	14	377	0.3	24.2	< 0.05	1470	13.0	< 0.1	411	10.8	170	8.9	8	2.76	121	13.5	7.05	2.98	53.2	16.6
E832204	535	761	546	9	146	0.7	64.8	< 0.05	1400	34.2	0.3	164	11.6	914	114	75	1.03	198	45.3	20.8	13.2	82.4	59.0
E832205	155	630	278	< 5	256	< 0.2	42.1	< 0.05	344	15.0	< 0.1	124	1.61	29.4	14.9	2	0.76	13.9	3.33	1.69	0.82	12.7	3.20
E832206	771	763	242	21	99	0.5	33.1	< 0.05	1270	34.6	0.2	126	15.9	1060	63.3	51	1.90	257	49.6	22.3	15.7	75.5	71.3
E832207	601	704	299	16	95	0.6	32.3	< 0.05	1010	27.2	0.2	106	9.25	866	15.3	34	1.84	153	39.8	18.2	12.5	60.6	56.8
E832208	399	809	378	13	126	0.5	39.9	< 0.05	913	33.0	0.2	139	7.16	608	29.6	239	2.73	147	40.0	18.3	11.2	49.2	51.5
E832209	442	798	143	6	530	1.2	177	< 0.05	837	51.1	0.1	697	7.12	1030	27.4	659	23.1	2860	108	56.0	35.1	28.6	151
E832210	16.3	314	43	65	99	1.2	67.4	4.30	595	2.55	1.8	94	6.20	65.6	51.1	37	5.81	666	14.0	7.58	2.40	20.1	12.9
E832211	446	716	525	19	171	1.1	955	0.07	1100	58.2	0.5	373	10.3	1030	74.4	193	9.19	865	101	47.3	32.9	60.2	137
E832212	444	578	970	< 5	153	0.5	108	< 0.05	1180	28.2	0.2	< 5	9.58	949	74.8	32	1.01	199	35.7	17.4	11.3	64.7	52.9
E832213	524	709	658	8	131	0.2	21.1	0.06	2350	24.2	0.1	11	3.97	284	31.0	13	9.29	161	39.7	20.6	7.59	114	42.6
E832214	745	656	210	6	197	0.5	23.6	< 0.05	1110	37.4	0.2	348	10.7	633	14.4	79	2.25	233	25.0	12.4	8.11	49.6	36.0
E832215	259	968	973	< 5	101	0.6	302	< 0.05	1230	26.2	0.1	38	6.49	185	45.4	49	0.50	320	20.5	11.5	4.67	55.3	20.6
E832216	333	255	350	< 5	26	< 0.2	160	< 0.05	660	22.4	< 0.1	< 5	3.00	97.8	38.9	8	1.72	151	5.81	2.94	1.89	39.1	7.16
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas			122				245	0.18	1630	42.5		945		969	56.1	162	0.71	2350		85.2	59.5		
TILL-1 Cert			48100.00				18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0		
TILL-1 Meas			119				239	0.17	1580	40.3		911		937	52.7	162	0.65	2340		83.3	59.3		
TILL-1 Cert			48100.00				18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0		
TILL-2 Meas			407				824	0.18	2720	169		4220		1450	89.1	637	11.9	5220		77.8	41.5		
TILL-2 Cert			38400.00				26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0		
TILL-2 Meas			387				823	0.21	2670	178		4340		1440	89.4	644	11.9	5310		79.6	41.5		
TILL-2 Cert			38400.00				26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0		
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig	16.3	314	43	65	99	1.2	67.4	4.30	595	2.55	1.8	94	6.20	65.6	51.1	37	5.81	666	14.0	7.58	2.40	20.1	12.9
E832213 Orig																							
E832213 Dup																							
E832215 Orig																							
E832215 Dup																							
Method Blank																							

Results

Activation Laboratories Ltd.

Report: A17-07437

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.27	< 0.1	< 5	< 0.05	< 0.02	0.6	< 2	< 0.01	1.5	< 0.01	< 0.01	< 0.01	0.2	< 0.03
Method Blank	< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.62	< 0.1	< 5	< 0.05	< 0.02	0.8	< 2	< 0.01	1.4	0.07	0.04	0.03	0.1	0.10
Method Blank																							
Method Blank																							

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	0.09	1.01	< 0.05	0.66	12	< 0.1	13.2	11.5	0.42	21800	345	2.2	4.05	52.4	< 1	23.3	< 0.5	3.35	< 0.5	25.3	0.09	< 0.05	1.5
E832202	0.35	4.18	< 0.05	3.58	7	< 0.1	50.6	24.5	2.78	4940	551	2.3	72.8	86.2	< 1	10.5	1.4	16.1	< 0.5	30.9	0.11	< 0.05	< 0.2
E832203	1.34	0.97	< 0.05	2.39	102	0.1	176	8.3	1.17	2560	55	2.4	24.4	51.0	< 1	12.6	< 0.5	29.3	< 0.5	47.4	0.07	< 0.05	0.9
E832204	2.00	5.21	< 0.05	7.46	83	1.1	554	18.9	2.35	23400	16	12.6	< 0.03	340	< 1	67.6	1.0	108	< 0.5	22.5	0.01	< 0.05	< 0.2
E832205	0.37	1.66	< 0.05	0.56	12	0.1	12.4	6.1	0.31	13600	71	1.4	< 0.03	15.3	< 1	9.5	< 0.5	3.63	< 0.5	15.7	0.03	< 0.05	0.8
E832206	2.20	4.46	< 0.05	8.12	70	0.6	709	4.6	2.74	13800	12	4.9	< 0.03	356	< 1	42.6	1.0	132	< 0.5	60.1	0.03	< 0.05	2.1
E832207	1.35	3.38	< 0.05	6.56	70	0.5	495	5.5	2.34	8250	9	4.0	< 0.03	184	< 1	37.8	0.7	97.6	< 0.5	50.1	0.01	< 0.05	< 0.2
E832208	0.89	3.04	< 0.05	6.64	96	0.7	413	4.3	2.25	6050	8	4.0	< 0.03	282	< 1	52.1	0.7	85.9	< 0.5	43.9	0.04	< 0.05	< 0.2
E832209	2.39	8.25	< 0.05	19.2	429	0.4	1070	9.6	8.16	3400	9	4.8	1030	3520	< 1	8.4	2.3	285	< 0.5	40.8	0.06	< 0.05	11.3
E832210	0.45	4.91	< 0.05	2.65	2	< 0.1	28.9	14.5	0.88	483	2100	2.0	19.6	76.8	< 1	79.7	3.4	9.66	< 0.5	338	< 0.01	< 0.05	16.6
E832211	2.68	8.90	< 0.05	17.1	174	0.6	990	8.2	6.08	142000	51	12.7	696	1030	< 1	25.5	2.6	243	< 0.5	86.5	0.29	< 0.05	26.3
E832212	2.86	3.74	< 0.05	6.01	10	0.4	486	7.0	2.54	63900	136	11.7	< 0.03	184	< 1	34.0	1.0	102	< 0.5	21.0	0.03	< 0.05	< 0.2
E832213	0.70	2.56	< 0.05	7.09	26	0.7	214	34.9	3.16	3400	43	7.6	87.2	116	< 1	40.0	< 0.5	49.3	< 0.5	47.2	< 0.01	< 0.05	1.1
E832214	0.69	2.74	< 0.05	4.42	237	0.5	429	6.2	1.69	1350	14	5.1	< 0.03	143	< 1	13.9	0.6	78.3	< 0.5	24.1	0.02	< 0.05	0.8
E832215	0.98	4.93	< 0.05	3.73	15	0.4	110	4.8	1.87	32800	63	8.1	< 0.03	329	< 1	30.1	1.3	25.2	< 0.5	13.7	0.05	< 0.05	11.9
E832216	0.29	0.81	< 0.05	1.04	4	0.3	51.5	6.3	0.48	3630	2	1.4	< 0.03	92.0	< 1	17.7	< 0.5	10.4	< 0.5	17.2	0.02	< 0.05	< 0.2
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		4.06	0.13				1010	< 0.2	9.43	53000	15	5.8	1760	53.5		183					43.3		113
TILL-1 Cert		13000	90.0				28000	15000	600.0	142000	2000	10000	26000	24000		22000					44000		7800.0
TILL-1 Meas		4.14	0.09				989	1.0	9.38	51100	15	5.5	1730	52.8		174					42.8		112
TILL-1 Cert		13000	90.0				28000	15000	600.0	14200	2000	10000	26000	24000		22000					44000		7800.0



	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	
SAMPLE	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
TILL-2 Meas		13.6	0.17				853	24.3	8.70	16900	124	23.8	161	81.0		373				224			8.1	
TILL-2 Cert		11000	70.0				44000	47000	600.0				780000	14000	20000	36000	32000		31000			143000		800.0
TILL-2 Meas		14.4	0.16				857	21.2	8.79	16200	136	23.7	164	84.9		364				224			8.4	
TILL-2 Cert		11000	70.0				44000	47000	600.0				780000	14000	20000	36000	32000		31000			143000		800.0
SdAR-M2 (U.S.G.S.) Meas																								
SdAR-M2 (U.S.G.S.) Cert																								
E832210 Orig	0.45	4.91	< 0.05	2.65	2	< 0.1	28.9	14.5	0.88	483	2100	2.0	19.6	76.8	< 1	79.7	3.4	9.66	< 0.5	338	< 0.01	< 0.05	16.6	
E832213 Orig																								
E832213 Dup																								
E832215 Orig																								
E832215 Dup																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.01	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.01	< 0.5	< 0.1	< 0.01	< 0.05	< 0.2	
Method Blank	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.09	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.04	< 0.5	< 0.1	0.02	< 0.05	< 0.2	
Method Blank																								
Method Blank																								

	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	
SAMPLE	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Na
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832201	26.2	< 1	3.38	549	0.18	0.61	< 1	19.7	1.0	0.34	112	191	1.89	28.4	2.71	1460	24.8	850	34800	2040	< 50	1730	100
E832202	137	3	17.4	514	0.23	3.05	< 1	55.6	2.8	1.96	880	273	1.40	170	16.9	1030	108	970	36400	450	< 50	1990	90
E832203	24.7	11	18.4	534	0.21	2.54	< 1	22.1	2.1	1.06	995	467	7.36	112	7.64	437	21.5	2430	40200	430	90	2650	110
E832204	154	8	72.3	743	1.26	8.96	< 1	278	1.3	2.71	302	329	2.50	254	17.8	706	121	2380	22000	1590	60	1200	< 50
E832205	28.2	< 1	3.56	369	0.08	0.56	< 1	16.4	< 0.2	0.28	44.2	85	0.70	22.0	2.04	325	51.4	570	24300	1040	< 50	1870	50
E832206	81.5	18	85.8	818	6.12	9.96	< 1	134	1.0	2.88	104	330	2.66	313	19.1	682	108	4120	23000	1110	110	780	80
E832207	61.5	7	68.3	665	0.34	8.09	< 1	101	0.4	2.37	73.9	145	1.85	259	16.1	695	85.1	3050	27000	1030	100	880	60
E832208	88.2	4	61.5	663	0.30	7.83	< 1	94.6	0.5	2.42	85.9	124	1.99	269	16.0	1000	77.3	2120	23500	1180	80	750	60
E832209	246	41	195	850	0.40	21.5	< 1	199	2.5	7.74	403	94	4.73	829	55.6	344	251	5990	26600	1230	50	2630	60
E832210	16.7	< 1	12.6	1230	0.08	2.33	< 1	3.82	5.7	0.94	1.86	182	4.25	83.5	5.89	178	194	630	3830	1530	240	680	430
E832211	147	46	165	645	0.92	20.3	< 1	156	4.5	6.14	549	689	8.99	676	41.5	332	269	4080	29800	2660	140	1480	100



	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	
SAMPLE	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	< 10	330	< 5	94300	40	< 100	< 2000	246	245	892	< 5000	33	100	28	19	6.8	< 5	22	< 10	< 5	< 20	7.1	< 200
E832202	< 10	420	< 5	91200	60	< 100	< 2000	353	417	1070	< 5000	56	450	80	63	11.1	< 5	63	< 10	< 5	< 20	19.6	< 200
E832203	3960	340	< 5	123000	90	< 100	< 2000	383	1450	1010	< 5000	78	120	93	63	18.2	42	107	< 10	5	< 20	21.5	4000
E832204	350	350	< 5	105000	170	< 100	< 2000	324	21400	5380	< 5000	35	820	471	233	114	281	705	10	< 5	< 20	87.9	300
E832205	< 10	250	< 5	32800	50	< 100	< 2000	90	377	426	< 5000	8	< 40	24	15	6.7	26	24	< 10	< 5	< 20	5.3	< 200
E832206	840	380	< 5	86400	190	< 100	< 2000	390	22700	4550	< 5000	56	710	538	266	125	292	794	< 10	9	< 20	100	800
E832207	790	280	< 5	76800	170	< 100	< 2000	257	14400	929	< 5000	49	250	409	217	93.4	218	586	< 10	6	< 20	80.2	800
E832208	1380	270	< 5	69700	210	< 100	< 2000	209	10600	1150	< 5000	88	860	368	186	78.9	139	525	< 10	6	< 20	71.8	1400
E832209	5110	960	< 5	110000	380	< 100	5000	255	22400	5510	8000	659	29700	1270	757	325	261	1810	30	81	< 20	258	5100
E832210	< 10	1040	< 5	12300	50	3200	< 2000	30	3750	1500	< 5000	136	11300	830	416	103	122	745	< 10	< 5	< 20	157	< 200
E832211	1980	6150	< 5	162000	380	< 100	< 2000	451	29200	4980	< 5000	428	3970	1450	768	363	439	2030	20	30	< 20	279	2000
E832212	< 10	400	< 5	78300	160	< 100	< 2000	344	15800	2810	< 5000	22	1320	387	201	88.7	274	616	< 10	5	< 20	73.5	< 200
E832213	30	120	< 5	127000	110	< 100	< 2000	121	3890	726	< 5000	87	750	353	196	52.4	142	374	< 10	< 5	< 20	69.4	< 200
E832214	2480	220	< 5	93200	260	< 100	< 2000	433	11300	932	< 5000	61	770	320	184	80.8	183	460	< 10	18	< 20	66.9	2500
E832215	< 10	800	< 5	71900	130	< 100	< 2000	243	3740	1160	< 5000	16	1440	222	134	42.1	155	241	< 10	6	< 20	47.2	< 200
E832216	10	330	< 5	54100	40	< 100	< 2000	281	1870	1040	< 5000	23	590	100	70	31.6	49	132	< 10	< 5	< 20	23.5	< 200
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		480	< 5	54500	180		< 2000		7090	3050	< 5000	26	10500		398	193				8	< 20		
TILL-1 Cert		18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0				13000	90.0		
TILL-1 Meas		430	< 5	54800	160		< 2000		7730	3020	< 5000	26	10200		405	203				11	< 20		
TILL-1 Cert		18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0				13000	90.0		
TILL-2 Meas		800	< 5	45500	380		4000		8060	2450	< 5000	323	15700		301	130				38	< 20		
TILL-2 Cert		26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0				11000	70.0		
TILL-2 Meas		760	< 5	46300	400		4000		8000	2490	< 5000	337	16100		306	136				47	< 20		
TILL-2 Cert		26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0				11000	70.0		
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig																							
E832213 Orig																							
E832213 Dup																							
E832215 Orig																							
E832215 Dup																							
Method Blank																							

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS
SAMPLE	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 10	< 40	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	< 1	< 10	< 5	< 20	< 0.5	< 200
Method Blank																							
Method Blank																							
Method Blank	< 10	40	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	< 1	< 10	< 5	< 20	0.7	< 200
Method Blank	< 10	110	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	2	< 10	< 5	< 20	0.6	< 200

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS
SAMPLE	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	1.6	260	< 50	4.5	150000	< 20	< 0.5	< 2	2780	< 100	870	< 100	28.0	< 100	140	< 0.5	< 100	< 5	< 200	400	15	< 100	41700
E832202	1.7	865	70	13.5	34000	100	< 0.5	144	6460	< 100	940	< 100	83.9	< 100	170	< 0.5	< 100	< 5	< 200	400	41	< 100	45900
E832203	1.8	2260	< 50	42.6	369000	< 20	2.9	< 2	1490	< 100	630	< 100	194	< 100	410	< 0.5	< 100	< 5	< 200	600	83	< 100	44100
E832204	5.3	14200	110	29.1	434000	< 20	3.3	< 2	7340	< 100	1780	< 100	1660	< 100	210	< 0.5	< 100	< 5	< 200	500	621	< 100	31800
E832205	2.1	289	1500	22.8	72600	< 20	< 0.5	< 2	1040	< 100	470	< 100	33.3	< 100	80	< 0.5	< 100	< 5	< 200	< 200	15	< 100	26500
E832206	4.0	16200	90	48.5	571000	< 20	1.0	< 2	9170	< 100	2340	< 100	1750	< 100	410	< 0.5	< 100	< 5	< 200	400	668	< 100	34800
E832207	3.1	11900	< 50	27.9	197000	< 20	< 0.5	< 2	5410	< 100	1110	< 100	1220	< 100	400	< 0.5	< 100	< 5	< 200	400	485	< 100	39400
E832208	4.7	10300	90	38.7	70900	< 20	0.8	< 2	6620	< 100	1780	< 100	1090	< 100	390	< 0.5	< 100	< 5	< 200	< 200	434	< 100	32800
E832209	6.7	32900	440	115	452000	< 20	34.0	3120	134000	< 100	1240	< 100	3890	< 100	500	< 0.5	< 100	64	600	300	1680	< 100	63200
E832210	2.5	1610	280	55.9	16200	2860	5.9	659	8850	< 100	3660	< 100	472	< 100	2820	< 0.5	< 100	51	300	< 200	584	< 100	9800
E832211	5.1	38700	200	102	290000	< 20	20.7	< 2	32500	< 100	2080	< 100	4330	< 100	1160	< 0.5	< 100	69	300	< 200	1820	< 100	46500
E832212	3.0	12200	70	49.9	368000	< 20	2.0	< 2	9690	< 100	1280	< 100	1320	< 100	160	< 0.5	< 100	< 5	< 200	< 200	476	< 100	27700
E832213	2.6	4060	110	37.2	24700	< 20	< 0.5	< 2	3040	< 100	3240	< 100	523	< 100	210	< 0.5	< 100	< 5	< 200	< 200	291	< 100	34900
E832214	4.9	11400	100	30.1	61800	< 20	15.8	< 2	4830	< 100	1140	< 100	1140	< 100	190	< 0.5	< 100	< 5	< 200	< 200	423	< 100	43100
E832215	3.6	2970	120	31.9	203000	< 20	< 0.5	< 2	8570	< 100	1240	< 100	406	< 100	110	< 0.5	< 100	< 5	< 200	< 200	208	< 100	36400
E832216	1.6	1660	< 50	3.1	46200	< 20	< 0.5	< 2	2780	< 100	920	< 100	268	< 100	50	< 0.5	< 100	< 5	< 200	800	90	< 100	16900
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		6180	110	52.2	672000	< 20	3.2	2800	750		7380				520			331	200		870		4700
TILL-1 Cert		28000	15000	600.0	14200	2000	10000	26000	24000		22000				44000			7800.0	13000		5900.0		291000
TILL-1 Meas		6500	110	56.7	664000	< 20	3.6	2670	780		7700				520			315	< 200		934		4700

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	
SAMPLE	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
TILL-1 Cert		28000	15000	600.0	1420000	2000	10000	26000	24000		22000				44000			7800.0	13000		5900.0		291000
TILL-2 Meas		3640	500	44.5	215000	90	44.9	< 2	1070		8270				3050			8	300		620		5500
TILL-2 Cert		44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0	12000		7400.0		144000
TILL-2 Meas		3770	510	42.9	216000	80	47.8	< 2	970		8360				3200			11	300		658		5700
TILL-2 Cert		44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0	12000		7400.0		144000
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig																							
E832213 Orig																							
E832213 Dup																							
E832215 Orig																							
E832215 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 2	< 50	< 0.5	< 40	< 20	< 0.5	< 2	< 80	< 100	< 20	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100
Method Blank																							
Method Blank																							
Method Blank	0.9	< 2	< 50	< 0.5	< 40	< 20	< 0.5	9	< 80	< 100	< 20	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100
Method Blank	0.5	3	< 50	2.9	140	< 20	< 0.5	7	< 80	< 100	100	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
E832201	< 0.5	4.5	< 10	6.6	< 500	25	3.1	51.3	1100	< 5	309	16.6	18900	< 400	1130	7800	2860	< 50	1380	< 500	< 300	5	48900
E832202	< 0.5	12.0	< 10	20.8	< 500	91	8.1	141	1900	< 5	1260	51.0	19600	< 400	970	4100	150	< 50	1430	< 500	< 300	5	41400
E832203	0.5	16.9	< 10	47.6	< 500	193	9.6	846	1300	< 5	1130	51.1	4300	< 400	3220	6700	1090	90	2010	< 500	300	< 5	61200
E832204	1.1	88.8	< 10	48.1	9400	25	30.2	337	900	< 5	3060	160	7500	< 400	4280	12500	6910	60	1040	< 500	1200	< 5	84800
E832205	< 0.5	4.0	< 10	2.8	< 500	3	2.2	11.3	500	< 5	221	11.5	5500	< 400	570	8000	540	< 50	1440	< 500	< 300	< 5	19300
E832206	< 0.5	96.9	< 10	49.8	1700	28	33.1	109	1300	< 5	4040	188	9000	< 400	6400	11800	4620	100	630	< 500	900	< 5	63900
E832207	0.6	77.7	< 10	30.8	900	7	25.7	87.5	< 500	< 5	3300	144	9200	< 400	5450	12600	5140	90	710	< 500	900	9	61700
E832208	1.2	67.9	< 10	27.2	2100	8	24.2	81.1	< 500	< 5	3030	135	12100	< 400	3800	13200	4890	70	650	< 500	700	< 5	56200
E832209	4.5	239	< 10	716	2800	144	98.2	505	600	< 5	11300	600	6100	2800	8110	14600	6910	< 50	2110	< 500	7900	9	76200
E832210	< 0.5	130	< 10	50.7	9700	27	53.2	46.4	900	< 5	4700	307	2600	< 400	30	2300	70	230	150	< 500	< 300	29	2700

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
E832211	2.7	265	< 10	122	4100	177	95.2	808	3400	< 5	11600	550	6400	1100	6290	12500	7060	160	1170	< 500	12700	9	78200
E832212	< 0.5	73.4	< 10	24.3	5800	17	27.3	387	8100	< 5	3000	158	9000	< 400	4180	12800	6650	< 50	1110	< 500	600	< 5	62200
E832213	< 0.5	58.2	< 10	39.4	2500	11	28.0	454	1100	< 5	3130	166	4600	< 400	3710	13300	4720	< 50	990	< 500	< 300	< 5	111000
E832214	2.3	58.2	< 10	163	2400	28	24.8	275	< 500	< 5	2740	135	3800	500	7420	12700	4220	< 50	1490	< 500	500	6	71400
E832215	< 0.5	37.3	< 10	23.2	2400	14	19.1	208	2100	< 5	1830	110	8500	< 400	2410	11800	6940	< 50	740	< 500	1400	< 5	58600
E832216	< 0.5	21.6	< 10	10.2	600	3	8.3	12.8	1600	< 5	829	46.8	6900	< 400	2320	7400	2190	< 50	520	< 500	700	< 5	39500
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	0.7	150		14.7	3900		156	1500		4820	304	6400	< 400			1370					1200	6	21500
TILL-1 Cert	700.0	1100.0		5600.0	59900.00		2200.0	99000		38000	3900.0	98000	502000			48100.00					18000	13	702000
TILL-1 Meas	< 0.5	153		16.7	3600		158	1400		4730	310	6800	< 400										
TILL-1 Cert	700.0	1100.0		5600.0	59900.00		2200.0	99000		38000	3900.0	98000	502000										
TILL-2 Meas	3.6	111		182	8700		469	600		6	3090	219	7200	1100		4310					5700	11	30400
TILL-2 Cert	1900.0	1200.0		18400.0	53000.00		5700.0	77000		5000	40000	3700.0	130000	390000		38400.00					26000	2	540000
TILL-2 Meas	2.2	123		198	8800		490	600		< 5	3200	229	7500	1100									
TILL-2 Cert	1900.0	1200.0		18400.0	53000.00		5700.0	77000		5000	40000	3700.0	130000	390000									
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig																							
E832213 Orig															3710	13300	4720	< 50	990	< 500	< 300	< 5	111000
E832213 Dup															3570	12600	4640	< 50	960	< 500	< 300	5	111000
E832215 Orig																							
E832215 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank															< 10	< 500	< 50	< 50	< 10	< 500	< 300	17	< 300
Method Blank															< 10	< 500	< 50	< 50	< 10	< 500	< 300	6	< 300
Method Blank																							
Method Blank	< 0.5	< 0.5	< 10	< 0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	< 500	< 400									
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 0.5	< 10	0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	< 500	< 400									

Results

Activation Laboratories Ltd.

Report: A17-07437

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
Method Blank	< 0.5	< 0.5	20	< 0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	500	< 400									

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	< 50	50	< 300	100	1430	730	< 500	46	1600	132	76	35	400	150	< 300	31	< 200	26	< 1000	< 2	910	< 1000	9
E832202	70	< 40	< 300	100	3370	730	< 500	80	3100	531	307	125	300	663	< 300	83	< 200	102	< 1000	< 2	3560	< 1000	51
E832203	80	50	8300	160	7790	350	2200	105	7500	468	244	132	560	709	< 300	93	< 200	85	7000	4	7410	< 1000	34
E832204	220	120	3200	310	61400	3760	9600	80	11300	1340	615	492	1100	2470	< 300	229	< 200	222	4000	8	31000	< 1000	59
E832205	< 50	< 40	< 300	50	1200	320	< 500	12	< 600	67	35	27	130	87	< 300	17	< 200	13	< 1000	< 2	590	< 1000	3
E832206	320	120	4400	280	78200	2340	8300	70	11900	1800	849	700	1100	3360	< 300	206	< 200	304	4000	5	41900	< 1000	84
E832207	230	120	4900	200	64300	680	6700	91	9200	1650	763	632	1070	3090	< 300	177	< 200	281	4000	4	36600	< 1000	80
E832208	220	80	8000	160	35200	930	11900	136	10900	1260	588	438	680	2180	< 300	176	< 200	209	7000	5	24700	< 1000	58
E832209	580	90	21800	190	72600	1190	71600	773	248000	4660	2480	1580	1050	7410	< 300	590	< 200	860	18000	9	82500	< 1000	295
E832210	< 50	< 40	< 300	< 20	70	110	< 500	54	2400	13	11	< 5	30	13	< 300	5	< 200	3	< 1000	2	40	< 1000	4
E832211	450	110	8500	330	91600	3220	22600	480	52800	4770	2240	1780	1160	8020	< 300	473	< 200	815	6000	7	89900	< 1000	232
E832212	210	50	500	240	56800	2540	5000	46	8400	1290	643	452	780	2400	300	158	< 200	225	< 1000	6	31000	< 1000	67
E832213	120	80	2800	90	14300	690	2900	122	6000	1200	613	276	1180	1600	500	94	< 200	221	2000	6	10500	< 1000	79
E832214	350	60	11600	270	45100	530	7400	88	16100	1240	635	457	1020	2260	500	155	< 200	215	10000	5	30600	< 1000	64
E832215	200	< 40	1300	200	13000	1240	4200	44	14200	726	395	216	760	1020	500	214	< 200	139	< 1000	3	7440	< 1000	51
E832216	110	< 40	400	130	10600	1810	1600	40	6200	448	215	176	420	703	500	63	< 200	77	< 1000	3	5310	< 1000	23
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	160		1000		6220	470	900	27	12000		431	252				33	< 200				6030	< 1000	48
TILL-1 Cert	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0				13000	90.0				28000	15000	600.0
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	460		9200		12800	1170	4000	758	33500		397	202				179	< 200				4480	2000	43
TILL-2 Cert	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0				11000	70.0				44000	47000	600.0
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig																							
E832213 Orig	120	80	2800	90	14300	690	2900	122	6000	1200	613	276	1180	1600	500	94	< 200	221	2000	6	10500	< 1000	79
E832213 Dup	100	80	1800	90	14000	680	2800	123	6100	1200	611	273	1130	1540	500	93	< 200	209	2000	5	10500	< 1000	80

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS
SAMPLE	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832215 Orig																							
E832215 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 50	50	< 300	< 20	< 40	< 50	< 500	< 2	< 600	< 5	2	< 5	< 20	< 5	< 300	< 5	< 200	< 1	< 1000	< 2	< 20	< 1000	< 1
Method Blank	< 50	50	< 300	< 20	< 40	< 50	< 500	< 2	< 600	< 5	< 1	< 5	< 20	< 5	< 300	< 5	< 200	< 1	< 1000	< 2	< 20	< 1000	< 1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS
SAMPLE	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832201	115000	2310	40	930	4000	< 1000	< 100	225	< 100	140	2	< 100	< 20	< 300	< 700	180	25800	4	24	< 200	400	< 100	11
E832202	20400	9080	< 20	3950	5000	< 1000	< 100	962	< 100	190	2	< 100	< 20	900	< 700	740	24800	< 3	99	< 200	1200	< 100	44
E832203	54900	470	150	5050	3000	< 1000	< 100	1370	< 100	430	< 1	< 100	60	700	< 700	810	27200	10	94	< 200	1200	100	34
E832204	294000	280	580	20200	11000	2000	< 100	6050	< 100	430	2	< 100	30	2800	900	2980	28800	35	306	< 200	8000	< 100	71
E832205	55300	660	< 20	550	2000	< 1000	< 100	139	< 100	90	< 1	< 100	< 20	< 300	< 700	110	18800	< 3	14	< 200	200	< 100	5
E832206	226000	240	310	28300	12000	2000	< 100	8090	< 100	510	< 1	< 100	40	1800	1000	4160	31100	7	407	< 200	4100	< 100	96
E832207	141000	180	260	25300	10000	2000	< 100	7040	< 100	570	2	< 100	50	1400	1000	3760	33900	5	368	< 200	3700	< 100	87
E832208	51500	100	220	16500	12000	2000	< 100	4690	< 100	480	1	< 100	30	1800	800	2550	29100	5	272	< 200	3700	< 100	67
E832209	121000	130	430	57400	167000	< 1000	< 100	16000	< 100	580	1	< 100	440	7200	2400	9040	55300	4	956	< 200	12700	200	304
E832210	1700	4360	< 20	60	3000	< 1000	< 100	10	< 100	2140	1	< 100	100	< 300	< 700	< 10	5800	< 3	3	< 200	< 100	< 100	1
E832211	135000 0	450	550	61800	43000	1000	< 100	17400	< 100	1530	2	< 100	500	4000	1600	9630	35900	10	1030	< 200	7200	200	261
E832212	358000	740	380	19800	10000	2000	< 100	5700	< 100	270	< 1	< 100	30	1400	< 700	2810	26200	17	282	< 200	3900	< 100	76
E832213	22900	500	290	9730	7000	1000	< 100	2430	< 100	230	1	< 100	20	1600	< 700	1820	32100	24	237	< 200	1800	< 100	82
E832214	30300	160	330	18500	11000	< 1000	< 100	5420	< 100	270	1	< 100	30	1700	1200	2650	38700	15	263	< 200	3400	< 100	75
E832215	214000	420	230	6820	14000	2000	< 100	1760	< 100	230	< 1	< 100	190	1300	< 700	1180	34400	11	146	< 200	2900	< 100	54
E832216	63200	150	70	4680	7000	1000	< 100	1200	< 100	120	1	< 100	30	1000	< 700	840	17600	< 3	90	< 200	1000	< 100	26
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	155000	90	90	5800	2000	2000				580			780	1400		1200	3100	< 3	167		600		



	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
TILL-1 Cert	142000	2000	10000	26000	24000	22000				44000			7800.0	13000		5900.0	291000	700.0	1100.0		5600.0		
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	72400	700	520	3980	4000	5000				5230			70	1700		910	4100	42	154		2000		
TILL-2 Cert																							
TILL-2 Meas	780000	14000	20000	36000	32000	31000				143000			800.0	12000		7400.0	144000	1900.0	1200.0		18400.0		
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832210 Orig																							
E832213 Orig	22900	500	290	9730	7000	1000	< 100	2430	< 100	230	1	< 100	20	1600	< 700	1820	32100	24	237	< 200	1800	< 100	82
E832213 Dup	22400	490	300	9580	7000	1000	< 100	2440	< 100	250	< 1	< 100	30	1600	< 700	1760	31500	22	228	< 200	1800	< 100	81
E832215 Orig																							
E832215 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 300	140	< 20	< 20	2000	< 1000	< 100	< 5	< 100	< 20	< 1	< 100	< 20	< 300	< 700	< 10	< 100	< 3	1	< 200	< 100	< 100	< 1
Method Blank	< 300	< 40	< 20	< 20	2000	< 1000	< 100	< 5	< 100	< 20	1	< 100	< 20	< 300	< 700	< 10	< 100	< 3	< 1	< 200	< 100	< 100	< 1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
E832201	800	2700	< 30	700	74	17000	900	0.001	< 1	0.023	0.2	< 0.1	9	0.019	0.17	0.16	0.01	0.02	3.80	< 0.1	4	5	129
E832202	5600	7100	40	3050	311	18000	2600	0.002	< 1	0.024	0.2	0.1	8	0.021	0.20	0.21	0.01	0.06	4.31	0.6	10	10	31
E832203	16100	7000	70	2580	222	4000	2600	0.004	< 1	0.084	0.3	0.2	11	0.023	0.27	0.50	0.02	0.05	4.58	< 0.1	11	8	343
E832204	3700	5200	< 30	5300	452	7000	6500	0.027	< 1	0.156	3.6	0.3	8	0.021	0.20	0.76	0.04	0.09	2.79	0.7	13	19	506
E832205	< 200	1100	< 30	380	26	4000	500	< 0.001	< 1	0.021	0.2	< 0.1	9	0.017	0.19	0.12	0.01	< 0.02	2.71	< 0.1	3	4	63
E832206	1200	5300	40	7870	565	7000	7200	0.014	< 1	0.120	1.3	0.2	7	0.022	0.10	0.93	0.04	0.10	2.71	0.5	10	16	596
E832207	1000	3700	< 30	7310	536	9000	5700	0.012	< 1	0.106	1.6	0.2	6	0.018	0.12	0.82	0.03	0.10	3.16	0.2	8	14	264
E832208	1000	2000	< 30	5840	410	11000	5200	0.012	< 1	0.128	1.9	0.3	10	0.019	0.29	0.64	0.03	0.08	2.91	0.1	8	75	109
E832209	6600	5000	140	25700	1900	4000	19500	0.012	< 1	0.160	7.8	0.6	12	0.017	0.70	1.77	0.03	0.07	3.26	1.3	20	316	683

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
E832210	< 200	400	< 30	120	7	3000	300	0.220	< 1	0.035	1.3	0.1	3	0.196	0.18	0.89	0.07	0.87	0.88	1.1	35	17	134
E832211	7400	11100	140	23100	1620	4000	17100	0.017	< 1	0.123	7.7	0.6	8	0.022	0.26	1.37	0.08	0.12	3.18	0.9	21	46	2690
E832212	3200	22800	< 30	6110	489	6000	5100	0.015	< 1	0.075	1.7	0.2	6	0.018	0.16	0.63	0.02	0.09	2.71	0.4	25	16	358
E832213	3800	3800	< 30	6510	511	< 1000	3200	0.007	< 1	0.049	0.3	0.1	5	0.020	0.12	0.47	0.01	0.07	2.25	0.8	5	6	24
E832214	2800	3900	40	6100	471	1000	4700	0.013	< 1	0.090	1.7	0.4	7	0.019	0.22	0.95	0.02	0.04	3.37	0.2	8	13	83
E832215	2200	8600	50	3620	351	6000	7700	0.007	< 1	0.033	0.8	0.2	10	0.021	0.12	0.38	0.02	0.04	4.05	0.8	11	12	228
E832216	300	8500	40	2000	177	11000	1700	0.007	< 1	0.041	0.3	0.1	6	0.021	0.08	0.38	0.01	0.03	2.17	0.6	12	13	74
GXR-1 Meas								0.006	< 1	0.048	4.5	0.7	14	0.044	0.13	0.34	0.03	1440	0.85	0.7	73	8	761
GXR-1 Cert								0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas								< 1	0.044	27.3	1.0		7	0.077	0.43	> 8.00	1.33	0.18	0.15	24.3	187	94	1060
GXR-6 Cert								0.0160	0.0350	32.0	1.40		9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010
TILL-1 Meas	200	2000		4130	343	4000	600																
TILL-1 Cert	2200.0	99000		38000	3900.0	98000	502000																
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	800	4800	860	3230	313	11000	4900																
TILL-2 Cert	5700.0	77000	5000	40000	3700.0	130000	390000																
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas											12.8	4.5					1.09		1.8	18	11		
SdAR-M2 (U.S.G.S.) Cert											17.9	6.6					1.05		4.1	25.2	49.6		
E832210 Orig																							
E832213 Orig	3800	3800	< 30	6510	511	< 1000	3200																
E832213 Dup	3600	3900	< 30	6430	510	1000	3200																
E832215 Orig								0.007	< 1	0.033	0.8	0.2	10	0.021	0.12	0.38	0.02	0.04	4.05	0.8	11	12	228
E832215 Dup								0.007	< 1	0.029	0.6	0.1	12	0.019	0.10	0.34	0.02	0.03	3.62	0.6	10	10	211
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 200	< 200	< 30	10	< 2	< 1000	< 100																
Method Blank	< 200	< 200	< 30	20	3	< 1000	< 100																
Method Blank								< 0.001	< 1	0.001	< 0.1	< 0.1	1	0.012	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	2	< 1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

Results

Activation Laboratories Ltd.

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	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce
DESCRIPTION	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832201	0.58	1.0	5.8	10.5	25.0	< 0.02	< 0.1	< 0.1	0.4	35.8	1.03	0.7	0.1	2.48	0.048	< 0.02	0.18	< 0.02	0.02	0.18	106	1.2	2.00
E832202	0.13	1.2	11.3	38.5	29.4	< 0.02	< 0.1	< 0.1	0.7	42.6	6.79	2.0	0.2	11.0	0.082	< 0.02	0.14	0.13	< 0.02	0.39	108	5.8	6.12
E832203	0.24	1.6	5.7	22.6	7.3	0.43	< 0.1	< 0.1	1.2	39.1	4.80	1.2	0.4	0.99	0.082	< 0.02	0.20	0.13	< 0.02	0.48	138	10.3	11.6
E832204	1.10	7.4	14.4	20.6	18.3	1.72	< 0.1	< 0.1	5.4	34.5	7.05	1.5	1.1	0.55	0.135	< 0.02	0.41	< 0.02	0.02	1.16	139	33.3	67.3
E832205	0.23	0.6	2.1	2.69	6.3	0.20	< 0.1	< 0.1	0.3	23.5	0.55	0.5	< 0.1	0.49	0.019	< 0.02	0.11	< 0.02	< 0.02	0.07	41.5	1.0	1.94
E832206	0.82	5.7	17.3	23.4	13.3	1.27	< 0.1	< 0.1	3.2	33.5	9.82	2.5	0.5	0.47	0.122	< 0.02	0.25	0.08	< 0.02	0.66	108	41.9	79.0
E832207	0.81	1.6	13.6	20.0	16.2	1.53	< 0.1	< 0.1	3.7	39.0	9.21	2.7	0.5	0.35	0.111	< 0.02	0.25	0.07	< 0.02	0.71	101	37.6	67.3
E832208	1.08	3.4	33.9	25.6	22.1	1.48	< 0.1	< 0.1	3.9	33.5	7.51	0.6	0.5	0.41	0.103	< 0.02	0.26	0.03	0.04	1.21	93.7	27.2	40.7
E832209	1.79	15.0	318	332	15.2	1.50	< 0.1	13.9	3.6	65.8	33.4	1.9	0.7	0.30	0.298	0.02	0.19	0.95	< 0.02	3.98	144	88.0	87.5
E832210	1.34	5.1	15.3	32.7	25.9	2.89	< 0.1	6.3	8.0	27.9	8.24	23.4	0.2	4.61	1.19	< 0.02	0.62	1.98	0.02	0.52	36.7	3.2	7.55
E832211	1.65	8.7	79.1	91.0	16.4	1.77	< 0.1	32.5	10.5	45.1	30.2	3.1	0.9	0.74	0.275	< 0.02	0.36	0.92	0.02	3.61	206	102	108
E832212	0.90	3.6	16.4	23.1	11.0	1.14	< 0.1	< 0.1	2.3	29.7	7.49	3.5	0.7	0.88	0.127	< 0.02	0.27	0.04	< 0.02	0.65	101	31.6	58.6
E832213	0.63	0.8	5.0	12.2	3.5	0.60	< 0.1	< 0.1	0.7	32.3	7.06	1.9	0.4	0.56	0.042	< 0.02	0.18	0.03	< 0.02	0.41	142	10.1	14.4
E832214	0.61	1.7	12.0	31.1	6.1	0.73	< 0.1	< 0.1	2.3	44.2	7.53	1.1	0.5	0.27	0.081	< 0.02	0.22	0.03	< 0.02	0.62	117	31.7	47.8
E832215	0.93	1.7	17.2	29.2	9.6	0.38	< 0.1	1.3	1.6	43.6	4.84	6.1	0.4	0.42	0.081	< 0.02	0.20	0.38	< 0.02	0.35	105	8.8	15.9
E832216	0.42	2.8	9.9	21.0	13.8	0.73	< 0.1	0.9	0.8	22.5	2.93	1.6	0.2	0.15	0.056	< 0.02	0.20	0.06	0.02	0.25	78.4	6.3	13.5
GXR-1 Meas	22.9	6.9	35.0	1110	747	0.52		402	2.0	181	25.8	9.9	0.1	16.4	30.9	0.84	23.5	88.3	13.7	2.96	445	5.7	11.2
GXR-1 Cert	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0
DH-1a Meas																							
DH-1a Cert																							
GXR-6 Meas	6.03	14.0	25.4	78.9	144	11.4		291	69.2	31.8	7.47	19.1	0.1	1.90	0.276	0.06	1.25	2.40	0.06	4.14	1130	12.3	35.5
GXR-6 Cert	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas		12.7	47.1	260	860	3.36			19.1	19.6	18.2	7.3	4.7	13.0						0.95	132	43.3	93.7
SdAR-M2 (U.S.G.S.) Cert		12.4	48.8	236.0000	760	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8
E832210 Orig																							
E832213 Orig																							
E832213 Dup																							
E832215 Orig	0.93	1.7	17.2	29.2	9.6	0.38	< 0.1	1.3	1.6	43.6	4.84	6.1	0.4	0.42	0.081	< 0.02	0.20	0.38	< 0.02	0.35	105	8.8	15.9

Results

Activation Laboratories Ltd.

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	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce
DESCRIPTION	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832215 Dup	0.82	1.5	16.1	27.4	9.1	0.56	< 0.1	0.9	1.5	38.3	4.11	5.6	0.3	0.41	0.085	< 0.02	0.20	0.34	< 0.02	0.34	94.9	7.9	14.3
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.01	< 0.1	< 0.1	0.16	< 0.1	0.13	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01	0.1	< 0.1	0.01	0.002	< 0.02	0.12	< 0.02	0.02	< 0.02	7.0	< 0.5	0.09
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832201	0.26	0.3	1.16	0.2	0.8	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.04	1.31	0.4	0.8
E832202	0.49	1.6	6.71	1.1	0.9	0.2	1.1	0.2	1.0	0.2	0.6	0.1	0.7	0.1	0.1	< 0.05	0.1	0.001	< 0.5	0.16	1.33	1.0	5.8
E832203	0.33	1.9	7.22	1.0	1.1	0.2	1.0	0.1	0.7	0.2	0.4	0.1	0.4	0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	0.30	1.53	0.4	18.2
E832204	0.35	6.2	22.9	3.1	1.0	0.5	2.6	0.3	1.5	0.3	0.7	0.1	0.6	0.1	< 0.1	< 0.05	< 0.1	< 0.001	0.7	0.11	4.11	1.1	4.2
E832205	0.07	0.2	0.81	0.1	0.6	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	0.8	< 0.02	0.80	0.1	0.2
E832206	0.43	7.7	29.7	3.9	1.3	0.6	3.3	0.4	1.9	0.3	0.9	0.1	0.7	0.1	0.1	< 0.05	0.1	< 0.001	< 0.5	0.05	3.25	0.9	1.4
E832207	0.21	7.1	27.2	3.6	1.1	0.6	3.1	0.4	1.8	0.3	0.8	0.1	0.6	0.1	0.1	< 0.05	0.1	< 0.001	< 0.5	0.04	2.97	1.1	1.2
E832208	0.18	5.2	19.2	2.6	1.2	0.4	2.2	0.3	1.4	0.3	0.7	0.1	0.5	0.1	< 0.1	< 0.05	0.1	0.002	0.9	0.04	4.14	0.3	1.3
E832209	0.23	16.7	65.9	9.4	2.7	1.7	8.0	1.0	5.3	1.1	2.9	0.4	2.4	0.4	< 0.1	< 0.05	0.1	0.002	1.9	0.34	2.68	1.2	7.2
E832210	0.03	1.0	4.97	1.2	< 0.1	0.3	1.6	0.3	1.5	0.3	0.8	0.1	0.6	0.1	0.6	< 0.05	0.2	< 0.001	2920	0.10	5.49	0.5	0.1
E832211	0.47	18.4	71.4	9.6	1.6	1.8	8.5	1.1	5.3	1.0	2.6	0.3	1.9	0.3	0.1	< 0.05	0.1	0.006	1.5	0.34	4.31	0.9	7.8
E832212	0.37	5.7	21.4	2.6	0.9	0.4	2.3	0.3	1.4	0.3	0.7	0.1	0.6	0.1	0.1	< 0.05	0.1	< 0.001	0.6	0.06	2.73	1.4	3.5
E832213	0.13	2.3	9.45	1.5	0.7	0.2	1.4	0.2	1.1	0.2	0.6	0.1	0.5	0.1	< 0.1	< 0.05	< 0.1	< 0.001	0.9	0.03	1.85	0.8	3.7
E832214	0.43	5.4	19.9	2.5	1.1	0.4	2.1	0.2	1.3	0.3	0.7	0.1	0.5	0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.10	1.73	0.4	3.0
E832215	0.28	2.1	8.20	1.2	1.3	0.2	1.2	0.2	0.8	0.2	0.5	0.1	0.4	0.1	0.2	< 0.05	< 0.1	0.001	0.7	0.04	2.44	2.5	2.4
E832216	0.37	1.4	5.84	0.9	1.0	0.2	0.9	0.1	0.6	0.1	0.3	< 0.1	0.3	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	1.79	0.6	0.4
GXR-1 Meas	2.47		6.82	2.0	12.6	0.5	3.3	0.7	4.3			0.4	2.1	0.3	0.2	< 0.05	160		3260	0.31	727	1.7	33.6
GXR-1 Cert	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9
DH-1a Meas																						> 200	2360
DH-1a Cert																						910	2629
GXR-6 Meas	0.11		12.8	2.3	0.4	0.6	2.2	0.3	1.6				0.8	0.1	0.6	< 0.05	0.1		99.1	1.88	110	4.6	0.9
GXR-6 Cert	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
TILL-2 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas	5.22	9.6	38.5	6.0		0.6	4.9	0.7	3.7	0.7	2.0	0.3	1.7	0.2	0.2	< 0.05	1.2				814	13.1	1.8
SdAR-M2 (U.S.G.S.) Cert	5.1	11.0	39.4	7.18		1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53
E832210 Orig																							
E832213 Orig																							
E832213 Dup																							
E832215 Orig	0.28	2.1	8.20	1.2	1.3	0.2	1.2	0.2	0.8	0.2	0.5	0.1	0.4	0.1	0.2	< 0.05	< 0.1	0.001	0.7	0.04	2.44	2.5	2.4
E832215 Dup	0.23	1.8	7.32	1.1	1.1	0.2	1.1	0.1	0.8	0.2	0.4	0.1	0.4	0.1	0.1	< 0.05	< 0.1	0.001	< 0.5	0.04	2.17	2.2	2.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	pH Meter	ISE
SAMPLE	Hg	Paste pH	Conduc tivity
DESCRIPTION	ppb	-	µS/cm
E832201	150	5.66	219
E832202	140	5.42	165
E832203	180	6.60	206
E832204	260	5.56	126
E832205	120	5.54	109
E832206	200	5.59	178
E832207	190	5.72	118
E832208	150	5.59	147
E832209	210	6.42	208
E832210	150	9.36	464
E832211	280	5.63	332
E832212	220	5.51	208
E832213	170	5.03	229
E832214	180	6.01	141

	AR-MS	pH Meter	ISE
SAMPLE	Hg	Paste pH	Conduc tivity
DESCRIPTION	ppb	-	µS/cm
E832215	180	5.67	204
E832216	160	4.89	118
GXR-1 Meas	3670		
GXR-1 Cert	3900		
DH-1a Meas			
DH-1a Cert			
GXR-6 Meas	190		
GXR-6 Cert	68.0		
TILL-1 Meas			
TILL-1 Cert			
TILL-1 Meas			
TILL-1 Cert			
TILL-2 Meas			
TILL-2 Cert			
TILL-2 Meas			
TILL-2 Cert			
SdAR-M2 (U.S.G.S.) Meas	1230		
SdAR-M2 (U.S.G.S.) Cert	1440.00		
E832210 Orig			
E832213 Orig			
E832213 Dup			
E832215 Orig	180		
E832215 Dup	180		
Method Blank			2.80
Method Blank			2.30
Method Blank		6.13	
Method Blank		6.87	
Method Blank			
Method Blank			
Method Blank	70		
Method Blank			
Method Blank			
Method Blank			
Method Blank			
Method Blank			



**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07438  
**Invoice Date:** 09-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

37 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 13-Conductivity Conductivity  
Code 13-Paste pH Paste pH  
Code 7-Bioleach Bioleach ICPMS  
Code 7-Cold Hydrox Cold Hydroxylamine Leach  
Code 7-Na Pyro Leach Na Pyrophosphate Leach-ICP/MS  
Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A17-07438**

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:

Assays are recommended for values above the upper limit. The Au from AR-MS is only semi-quantitative. For accurate Au data, fire assay is recommended.

Values obtained in the QC page are from selective extractions. Certified values are not obtained through sequential extractions



CERTIFIED BY:



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Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	117	1470	352	10	245	< 0.2	86.1	< 0.05	1690	13.0	< 0.1	40	6.01	86.7	72.0	10	1.58	122	6.62	3.42	1.63	61.2	7.30
E832302	130	938	326	12	197	< 0.2	174	< 0.05	1070	14.2	< 0.1	60	4.95	37.9	25.2	7	1.02	40.4	4.19	2.23	1.06	37.1	4.47
E832303	114	952	428	9	239	< 0.2	116	< 0.05	1090	11.1	< 0.1	6	4.45	36.9	15.3	6	2.18	34.8	4.64	2.47	1.17	34.8	4.82
E832304	77.4	1420	45	12	249	< 0.2	112	< 0.05	1800	6.36	< 0.1	21	6.75	72.2	21.0	9	2.39	51.1	5.86	2.93	1.62	56.1	6.52
E832305	214	808	73	27	77	< 0.2	73.2	< 0.05	1150	10.2	< 0.1	97	7.20	34.9	48.5	41	4.65	86.0	3.11	1.53	0.81	46.9	3.17
E832306	276	80	60	14	8	< 0.2	48.3	< 0.05	152	9.75	< 0.1	64	2.25	21.4	15.3	9	3.17	25.5	0.58	0.25	0.16	13.2	0.58
E832307	18.9	1390	15	10	543	< 0.2	5910	0.18	1280	5.76	< 0.1	293	3.36	36.5	13.4	9	0.62	34.2	3.19	1.63	0.97	39.5	3.70
E832308	4.6	1060	9	24	469	< 0.2	300	0.82	1380	2.66	< 0.1	111	1.91	10.9	4.2	2	1.28	18.8	0.76	0.36	0.31	42.6	0.90
E832309	19.7	882	126	11	414	< 0.2	226	< 0.05	1290	4.67	< 0.1	155	0.97	17.8	8.2	6	2.76	19.2	1.69	0.90	0.47	33.2	1.74
E832310	14.8	333	44	65	101	1.2	72.1	4.46	614	2.60	1.6	132	7.62	63.6	54.0	41	6.09	751	14.3	7.72	2.44	21.1	12.8
E832311	27.6	1590	67	22	454	< 0.2	140	< 0.05	2470	5.38	< 0.1	176	4.87	34.2	11.4	5	3.44	29.8	2.34	1.23	0.75	74.3	2.66
E832312	41.7	2750	63	16	488	< 0.2	77.8	< 0.05	5640	7.16	< 0.1	650	4.63	39.0	13.6	14	2.14	17.5	3.98	1.91	1.19	155	4.07
E832313	7.6	1100	14	16	476	< 0.2	41.9	< 0.05	2440	3.81	< 0.1	137	0.86	19.6	5.7	< 2	0.33	11.2	1.19	0.54	0.42	76.1	1.54
E832314	164	460	129	9	121	< 0.2	103	< 0.05	269	14.1	< 0.1	99	2.07	12.8	14.9	3	2.37	10.8	2.11	1.08	0.51	12.8	1.98
E832315	40.9	1100	934	309	101	< 0.2	113	< 0.05	1830	5.51	< 0.1	257	5.14	18.2	16.8	8	12.1	62.7	2.50	1.44	0.73	58.0	2.61
E832316	56.8	1190	15	54	134	< 0.2	23.7	< 0.05	2890	8.59	< 0.1	115	5.48	49.5	19.1	3	2.01	82.1	6.95	3.90	2.10	88.9	7.71
E832317	177	1020	80	116	116	0.3	148	< 0.05	3460	13.2	< 0.1	561	68.1	249	31.1	13	1.94	843	28.4	15.9	9.53	110	39.4
E832318	47.4	1840	308	58	447	< 0.2	500	< 0.05	5470	9.30	< 0.1	371	8.54	29.4	20.7	8	0.64	40.4	3.40	1.66	1.04	155	3.49
E832319	33.9	1630	860	21	352	< 0.2	208	< 0.05	5140	6.71	< 0.1	266	5.13	26.6	33.8	6	2.15	37.4	2.50	1.31	0.83	144	2.63
E832320	5.6	239	14	43	10	0.6	64.7	0.20	1630	1.58	0.1	191	4.82	437	3520	62	1.30	2260	3.99	1.73	1.91	47.1	14.0
E832321	35.3	975	73	7	422	< 0.2	82.0	< 0.05	1940	6.99	< 0.1	142	2.06	32.7	7.2	3	0.41	16.4	2.54	1.18	0.73	60.2	2.86
E832322	49.3	2050	55	27	524	< 0.2	53.0	< 0.05	2700	6.34	< 0.1	92	4.25	47.8	8.3	6	2.34	28.1	3.61	1.67	1.08	79.9	3.84
E832323	29.3	1350	27	30	486	< 0.2	89.7	< 0.05	2220	7.26	< 0.1	170	2.10	25.4	5.4	6	1.00	22.5	2.09	1.02	0.63	69.3	2.31
E832324	49.6	3160	78	34	570	< 0.2	148	< 0.05	4940	5.81	< 0.1	188	9.28	41.7	31.9	7	4.55	31.8	3.44	1.73	1.10	129	3.72
E832325	25.5	1580	38	17	478	< 0.2	347	< 0.05	3580	5.73	< 0.1	160	2.26	29.7	14.5	8	2.41	27.0	2.39	1.24	0.86	105	2.87
E832326	185	1330	642	23	316	0.3	4670	< 0.05	2780	19.8	< 0.1	206	3.46	57.8	41.7	31	8.26	163	9.08	5.42	2.10	81.7	8.75
E832327	236	537	87	13	51	< 0.2	91.9	< 0.05	743	20.4	< 0.1	56	5.26	20.2	24.8	10	3.09	39.9	2.52	1.36	0.64	27.1	2.44
E832328	703	699	276	19	104	0.7	3920	0.08	613	70.0	0.2	398	3.12	2840	48.0	135	0.27	797	79.4	40.7	27.0	31.7	124
E832329	340	1990	677	12	98	0.2	175	< 0.05	4050	21.0	< 0.1	359	12.7	122	315	14	1.21	179	13.1	7.60	3.17	121	13.6
E832330	12.5	409	36	83	143	1.5	89.2	3.51	659	2.80	1.1	124	11.9	56.6	48.3	34	5.44	874	13.3	7.34	2.20	20.4	12.0
E832331	476	2150	773	12	92	0.5	263	0.34	6150	34.7	0.1	145	35.8	1260	299	43	1.94	297	53.0	27.8	13.5	210	68.8
E832332	173	504	178	7	65	0.2	222	0.06	564	16.2	< 0.1	165	2.39	18.3	15.1	10	1.99	57.7	2.65	1.56	0.64	20.1	2.85
E832333	124	1590	216	10	116	< 0.2	269	< 0.05	1770	12.1	< 0.1	41	10.2	37.7	21.8	17	3.25	46.6	4.29	2.19	1.05	65.6	4.38
E832334	166	1580	144	8	172	< 0.2	101	< 0.05	2090	14.4	< 0.1	33	12.0	62.9	30.9	12	3.64	53.1	7.31	3.64	1.76	78.5	7.43
E832335	143	1910	382	9	292	< 0.2	135	< 0.05	1910	16.0	< 0.1	111	9.93	43.0	45.4	9	1.60	55.5	5.45	2.92	1.26	67.9	5.19
E832336	94.2	1250	402	6	204	< 0.2	103	< 0.05	1230	10.6	< 0.1	20	4.60	24.0	33.6	18	1.31	34.8	2.93	1.49	0.73	39.1	2.94
E832337	119	925	158	< 5	221	< 0.2	75.7	< 0.05	820	14.9	< 0.1	14	5.65	21.3	19.4	11	0.96	44.1	2.88	1.47	0.65	27.5	2.57
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas			122				245	0.18	1630	42.5		945		969	56.1	162	0.71	2350		85.2	59.5		
TILL-1 Cert			48100.00				18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0		
TILL-1 Meas			119				239	0.17	1580	40.3		911		937	52.7	162	0.65	2340		83.3	59.3		
TILL-1 Cert			48100.00				18000	13	702000	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0		
TILL-2 Meas			407				824	0.18	2720	169		4220		1450	89.1	637	11.9	5220		77.8	41.5		
TILL-2 Cert			38400.00				26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0		
TILL-2 Meas			387				823	0.21	2670	178		4340		1440	89.4	644	11.9	5310		79.6	41.5		
TILL-2 Cert			38400.00				26000	2	540000	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0		
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig																							
E832301 Dup																							
E832302 Orig																							
E832302 Dup																							
E832303 Orig	114	952	428	9	239	< 0.2	116	< 0.05	1090	11.1	< 0.1	6	4.45	36.9	15.3	6	2.18	34.8	4.64	2.47	1.17	34.8	4.82
E832303 Dup	102	1030	381	9	247	< 0.2	109	< 0.05	1220	9.70	< 0.1	< 5	4.98	39.4	17.3	6	2.32	37.4	4.79	2.47	1.20	37.6	4.87
E832313 Orig																							
E832313 Dup																							
E832314 Orig	164	460	129	9	121	< 0.2	103	< 0.05	269	14.1	< 0.1	99	2.07	12.8	14.9	3	2.37	10.8	2.11	1.08	0.51	12.8	1.98
E832314 Dup	159	457	130	9	125	< 0.2	102	< 0.05	264	14.4	< 0.1	84	2.05	12.5	15.3	4	2.51	10.8	1.96	1.01	0.52	12.6	2.01
E832327 Orig																							
E832327 Dup																							
E832330 Orig																							
E832330 Dup																							
E832332 Orig																							
E832332 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.27	< 0.1	< 5	< 0.05	< 0.02	0.6	< 2	< 0.01	1.5	< 0.01	< 0.01	< 0.01	0.2	< 0.03
Method Blank	< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.62	< 0.1	< 5	< 0.05	< 0.02	0.8	< 2	< 0.01	1.4	0.07	0.04	0.03	0.1	0.10
Method Blank																							

	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	
SAMPLE	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							
Method Blank																							

	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	
SAMPLE	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	< 0.05	1.63	< 0.05	1.18	6	0.1	59.6	24.1	1.08	21000	59	1.5	< 0.03	234	< 1	74.0	< 0.5	10.3	< 0.5	28.1	0.10	< 0.05	< 0.2
E832302	< 0.05	1.62	< 0.05	0.78	9	0.2	20.4	14.3	0.33	28000	29	1.6	< 0.03	63.9	< 1	55.8	< 0.5	4.66	< 0.5	27.5	0.08	< 0.05	0.5
E832303	< 0.05	1.58	< 0.05	0.84	5	0.2	20.1	8.3	0.38	31000	12	1.6	< 0.03	41.0	< 1	30.5	< 0.5	4.90	< 0.5	38.3	0.03	< 0.05	< 0.2
E832304	< 0.05	1.19	< 0.05	1.01	2	0.1	37.9	26.2	0.43	12800	3	0.6	< 0.03	46.1	< 1	74.0	< 0.5	8.64	< 0.5	41.8	0.07	< 0.05	2.9
E832305	< 0.05	2.00	< 0.05	0.58	5	0.3	21.3	1180	0.29	2980	2	2.3	< 0.03	149	< 1	177	< 0.5	4.31	< 0.5	111	0.06	< 0.05	92.7
E832306	< 0.05	1.40	< 0.05	0.09	10	0.1	19.6	166	0.04	1020	2	0.5	< 0.03	37.9	< 1	13.8	< 0.5	0.73	< 0.5	56.6	0.03	< 0.05	7.0
E832307	< 0.05	0.31	< 0.05	0.55	100	< 0.1	29.5	30.9	0.24	1540	984	0.3	1.89	154	< 1	18.9	0.8	5.53	< 0.5	11.1	0.38	< 0.05	16.1
E832308	< 0.05	< 0.04	< 0.05	0.12	24	< 0.1	6.36	39.0	0.07	10800	521	< 0.2	< 0.03	25.0	< 1	24.5	0.6	1.38	< 0.5	36.0	0.15	< 0.05	5.9
E832309	< 0.05	0.35	< 0.05	0.32	14	< 0.1	10.5	64.4	0.14	4880	114	0.3	< 0.03	14.9	< 1	45.5	< 0.5	2.35	< 0.5	34.9	0.14	< 0.05	11.4
E832310	0.30	5.10	< 0.05	2.73	2	< 0.1	27.9	16.6	0.90	520	2370	2.1	19.4	79.7	< 1	78.3	3.5	9.28	< 0.5	353	0.01	< 0.05	20.4
E832311	< 0.05	0.35	< 0.05	0.42	11	< 0.1	17.5	54.1	0.16	10800	55	0.4	< 0.03	16.7	< 1	44.2	< 0.5	3.53	< 0.5	44.0	0.13	< 0.05	4.1
E832312	< 0.05	0.62	< 0.05	0.69	13	< 0.1	23.2	38.4	0.25	20700	206	1.9	< 0.03	57.6	< 1	253	< 0.5	4.86	< 0.5	33.1	0.16	< 0.05	1.8
E832313	< 0.05	< 0.04	< 0.05	0.19	15	< 0.1	10.8	28.7	0.07	11300	193	< 0.2	< 0.03	0.3	< 1	15.7	< 0.5	2.31	< 0.5	27.1	0.09	< 0.05	2.9
E832314	< 0.05	2.58	< 0.05	0.36	6	0.2	5.47	11.0	0.24	21000	6	1.1	1.14	6.5	< 1	25.2	0.6	1.77	< 0.5	36.1	0.04	< 0.05	0.7
E832315	0.13	0.95	< 0.05	0.47	61	0.4	11.7	204	0.22	3720	21	1.3	4.10	85.2	< 1	86.5	< 0.5	2.85	< 0.5	1160	0.11	< 0.05	5.0
E832316	< 0.05	1.17	< 0.05	1.32	12	< 0.1	41.4	53.6	0.68	10000	7	0.4	25.8	112	< 1	28.7	< 0.5	10.0	< 0.5	164	0.06	< 0.05	4.1
E832317	0.80	1.08	< 0.05	5.36	154	0.2	409	47.1	2.79	20300	34	0.6	235	648	< 1	85.6	< 0.5	67.6	< 0.5	323	0.99	< 0.05	8.8
E832318	< 0.05	0.69	< 0.05	0.60	20	0.2	20.1	61.5	0.23	56200	39	0.8	< 0.03	31.6	< 1	94.5	< 0.5	4.15	< 0.5	78.8	0.12	< 0.05	7.9
E832319	< 0.05	0.78	< 0.05	0.46	13	0.1	15.3	28.5	0.18	27200	51	1.0	< 0.03	67.7	< 1	50.8	< 0.5	3.05	< 0.5	41.9	0.11	< 0.05	2.9
E832320	0.25	< 0.04	0.15	0.57	11	< 0.1	242	57.8	0.20	1760	21	6.2	< 0.03	50.2	< 1	392	2.1	51.5	< 0.5	111	0.04	0.21	93.7
E832321	< 0.05	0.27	< 0.05	0.44	8	< 0.1	16.4	23.8	0.19	10400	23	0.3	< 0.03	< 0.2	< 1	21.4	< 0.5	3.86	< 0.5	13.5	0.05	< 0.05	2.3
E832322	< 0.05	0.53	< 0.05	0.60	9	0.1	26.1	34.9	0.22	7430	28	0.4	< 0.03	17.5	< 1	60.1	< 0.5	5.23	< 0.5	45.3	0.16	< 0.05	5.4
E832323	< 0.05	0.29	< 0.05	0.34	13	< 0.1	14.5	36.4	0.13	7680	58	0.8	< 0.03	7.2	< 1	42.6	< 0.5	3.06	< 0.5	48.1	0.14	< 0.05	5.3
E832324	< 0.05	0.62	< 0.05	0.62	15	0.1	26.4	38.9	0.20	20500	69	0.6	< 0.03	44.6	< 1	114	< 0.5	4.63	< 0.5	57.1	0.14	< 0.05	4.7
E832325	< 0.05	0.33	< 0.05	0.40	11	< 0.1	18.3	28.1	0.19	11700	122	0.4	< 0.03	48.9	< 1	47.8	< 0.5	3.96	< 0.5	22.9	0.18	< 0.05	6.1
E832326	< 0.05	2.57	< 0.05	1.75	24	0.3	42.6	52.1	0.89	33100	63	3.4	16.1	347	< 1	103	1.0	9.90	< 0.5	58.1	0.26	< 0.05	18.9
E832327	< 0.05	2.04	< 0.05	0.50	8	0.2	10.9	15.9	0.24	9970	2	0.8	< 0.03	47.3	< 1	24.7	< 0.5	2.55	< 0.5	39.8	0.07	< 0.05	2.4
E832328	2.40	6.31	< 0.05	14.0	49	0.3	1230	1.1	5.51	4710	47	7.4	< 0.03	417	< 1	24.4	1.7	252	< 0.5	59.7	0.82	< 0.05	69.7
E832329	0.41	2.37	< 0.05	2.45	15	0.3	81.1	30.8	1.24	45600	16	2.6	< 0.03	446	< 1	77.6	0.6	15.7	< 0.5	55.0	0.10	< 0.05	17.0
E832330	< 0.05	4.53	< 0.05	2.61	3	< 0.1	25.7	18.5	0.91	576	3400	2.0	19.4	68.6	< 1	74.1	5.2	8.47	< 0.5	413	0.03	< 0.05	27.2
E832331	2.18	4.59	0.08	9.82	35	0.8	726	27.9	3.68	63700	19	7.6	< 0.03	573	< 1	114	1.3	113	< 0.5	36.8	0.11	< 0.05	15.6
E832332	0.14	1.97	< 0.05	0.52	9	0.1	13.1	57.2	0.91	17000	8	1.1	4.34	32.6	< 1	27.0	0.6	2.96	< 0.5	21.0	0.04	< 0.05	8.1
E832333	0.31	0.96	< 0.05	0.75	4	0.2	22.7	37.2	0.35	12900	7	0.9	< 0.03	62.4	< 1	139	< 0.5	4.77	< 0.5	27.0	0.08	< 0.05	4.2
E832334	0.23	0.92	< 0.05	1.27	4	0.2	35.4	11.2	0.51	13800	4	0.8	< 0.03	120	< 1	110	< 0.5	7.58	< 0.5	33.1	0.06	< 0.05	2.8
E832335	0.32	1.46	< 0.05	1.03	15	0.3	26.8	10.8	0.46	40900	55	1.5	< 0.03	98.3	< 1	42.3	< 0.5	5.46	< 0.5	29.8	0.06	< 0.05	2.4
E832336	0.13	1.02	< 0.05	0.52	9	0.1	13.6	16.7	0.29	23400	50	0.9	< 0.03	33.0	< 1	60.8	< 0.5	3.03	< 0.5	16.1	0.21	< 0.05	4.4

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832337	0.10	1.40	< 0.05	0.50	6	0.1	10.7	9.4	0.29	12500	66	0.9	< 0.03	45.9	< 1	58.7	< 0.5	2.64	< 0.5	16.7	0.08	< 0.05	1.7
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		4.06	0.13				1010	< 0.2	9.43	53000	15	5.8	1760	53.5		183				43.3			113
TILL-1 Cert		13000	90.0				28000	15000	600.0	142000	2000	10000	26000	24000		22000				44000			7800.0
TILL-1 Meas		4.14	0.09				989	1.0	9.38	51100	15	5.5	1730	52.8		174				42.8			112
TILL-1 Cert		13000	90.0				28000	15000	600.0	142000	2000	10000	26000	24000		22000				44000			7800.0
TILL-2 Meas		13.6	0.17				853	24.3	8.70	16900	124	23.8	161	81.0		373				224			8.1
TILL-2 Cert		11000	70.0				44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0
TILL-2 Meas		14.4	0.16				857	21.2	8.79	16200	136	23.7	164	84.9		364				224			8.4
TILL-2 Cert		11000	70.0				44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig																							
E832301 Dup																							
E832302 Orig																							
E832302 Dup																							
E832303 Orig	< 0.05	1.58	< 0.05	0.84	5	0.2	20.1	8.3	0.38	31000	12	1.6	< 0.03	41.0	< 1	30.5	< 0.5	4.90	< 0.5	38.3	0.03	< 0.05	< 0.2
E832303 Dup	< 0.05	1.37	< 0.05	0.85	4	0.2	21.0	8.7	0.41	32100	10	1.4	< 0.03	49.7	< 1	37.5	< 0.5	5.19	< 0.5	35.1	0.04	< 0.05	0.7
E832313 Orig																							
E832313 Dup																							
E832314 Orig	< 0.05	2.58	< 0.05	0.36	6	0.2	5.47	11.0	0.24	21000	6	1.1	1.14	6.5	< 1	25.2	0.6	1.77	< 0.5	36.1	0.04	< 0.05	0.7
E832314 Dup	< 0.05	2.51	< 0.05	0.37	6	0.1	5.32	10.4	0.22	21300	5	1.1	0.70	6.4	< 1	12.9	0.6	1.75	< 0.5	36.4	0.03	< 0.05	3.4
E832327 Orig																							
E832327 Dup																							
E832330 Orig																							
E832330 Dup																							
E832332 Orig																							
E832332 Dup																							
Method Blank																							
Method Blank																							
Method Blank																							

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.01	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.01	< 0.5	< 0.1	< 0.01	< 0.05	< 0.2
Method Blank	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.09	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.04	< 0.5	< 0.1	0.02	< 0.05	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS
SAMPLE	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Na
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
E832301	24.5	5	7.58	1200	0.10	1.20	< 1	14.0	0.5	0.45	108	223	0.82	44.5	3.08	630	44.1	550	29200	1280	< 50	970	70
E832302	39.3	4	4.51	941	0.22	0.75	< 1	6.65	0.4	0.30	61.0	109	1.03	27.9	2.30	921	39.9	490	22500	890	< 50	710	70
E832303	32.1	< 1	4.99	937	0.14	0.82	< 1	7.83	0.2	0.35	14.3	110	0.59	30.2	2.52	749	44.0	370	22500	850	< 50	690	90
E832304	27.3	< 1	7.48	1020	0.05	1.08	< 1	1.80	0.3	0.40	14.4	49	0.84	36.0	2.89	1490	32.1	280	16700	160	< 50	450	110
E832305	31.1	< 1	3.42	1110	0.12	0.55	< 1	6.91	0.8	0.20	11.3	182	1.47	18.8	1.32	1980	47.9	310	7150	170	70	280	220
E832306	31.5	< 1	0.61	109	0.05	0.09	< 1	9.04	0.6	0.04	8.15	67	0.51	2.86	0.21	236	26.6	530	5590	220	80	230	180
E832307	15.8	11	4.30	764	0.02	0.61	< 1	8.71	0.6	0.23	855	197	12.1	22.2	1.46	809	8.4	700	47700	360	100	3420	130
E832308	5.9	< 1	1.01	602	< 0.01	0.16	< 1	1.45	< 0.2	0.05	26.9	13	1.93	4.28	0.36	347	1.9	200	35200	310	180	2580	160
E832309	8.5	< 1	2.15	536	0.01	0.32	< 1	2.53	< 0.2	0.11	12.5	24	2.86	10.6	0.90	430	10.4	260	30800	1170	70	2230	110
E832310	19.0	< 1	12.6	1330	0.08	2.39	< 1	3.88	6.3	1.01	1.93	199	4.74	83.9	6.20	244	196	670	4150	1610	260	730	470
E832311	10.6	3	3.00	1220	0.02	0.42	< 1	2.85	0.3	0.17	20.0	36	2.68	13.7	1.05	894	10.4	340	34100	500	110	2390	120
E832312	10.5	4	4.14	2370	0.04	0.71	< 1	3.19	0.5	0.25	16.0	47	0.83	23.5	1.62	517	14.2	290	35200	360	70	2450	160
E832313	4.9	< 1	1.74	863	< 0.01	0.24	< 1	1.89	< 0.2	0.07	8.05	15	1.19	6.58	0.44	163	2.7	200	35500	350	100	2500	100
E832314	39.7	< 1	2.17	366	0.09	0.34	< 1	15.8	< 0.2	0.16	13.6	79	0.34	14.1	1.25	453	54.0	460	21600	520	< 50	530	70
E832315	14.7	2	2.65	1180	0.08	0.44	< 1	10.1	0.7	0.19	11.5	66	9.30	16.5	1.33	931	25.9	170	26600	2340	1220	350	250
E832316	19.1	2	8.69	1100	0.03	1.28	< 1	10.7	0.3	0.55	14.5	22	1.23	49.9	4.08	866	30.6	470	34400	220	240	830	110
E832317	22.8	35	43.2	801	0.05	5.61	< 1	28.8	2.0	2.21	40.3	190	11.9	260	16.1	605	27.5	2490	37700	840	640	750	130
E832318	11.9	2	3.55	1930	0.05	0.58	< 1	2.75	0.6	0.23	16.1	56	2.50	23.1	1.57	1560	16.1	410	27800	1680	250	2100	110
E832319	10.6	3	2.76	1650	0.07	0.44	< 1	3.66	0.4	0.19	12.6	73	1.53	16.9	1.21	1810	21.6	250	27000	3260	90	1880	110
E832320	6.2	< 1	21.9	605	3.06	1.26	< 1	131	1.6	0.18	75.3	39	2060	16.3	1.14	6130	166	310	2670	930	150	110	60
E832321	11.7	< 1	3.22	1050	0.03	0.47	< 1	3.17	< 0.2	0.16	14.3	35	2.22	15.8	1.21	113	7.8	410	27900	410	< 50	1890	60
E832322	13.0	< 1	4.21	1770	0.03	0.64	< 1	4.18	0.2	0.21	17.7	48	1.42	21.5	1.42	357	10.1	410	31300	350	130	2330	100
E832323	6.6	< 1	2.38	1170	0.02	0.39	< 1	2.66	0.3	0.14	42.7	31	2.14	13.1	0.88	304	7.3	350	37700	230	140	2660	90
E832324	9.3	< 1	3.79	2530	0.04	0.62	< 1	3.67	1.0	0.23	93.9	64	1.89	21.8	1.43	1870	13.0	300	28900	350	120	2160	120
E832325	10.6	2	3.20	1130	0.01	0.44	< 1	5.17	0.4	0.17	75.7	29	1.70	15.1	1.11	329	6.9	410	38400	430	90	2790	100
E832326	57.4	1	8.74	1190	0.22	1.54	< 1	15.3	2.5	0.77	52.0	98	3.91	66.2	5.53	1690	69.6	1300	30300	2500	100	2190	80
E832327	53.8	< 1	2.48	560	0.08	0.43	< 1	13.3	0.3	0.19	14.7	88	0.39	16.6	1.51	609	37.2	620	17900	370	50	550	90
E832328	203	68	146	380	0.45	16.3	< 1	188	1.3	5.47	455	1400	7.01	574	36.9	91	156	9640	36400	1580	110	1010	100
E832329	62.7	< 1	13.0	1920	0.24	2.28	< 1	44.5	2.0	1.05	44.3	309	0.87	104	7.28	579	56.8	1330	28200	1840	50	660	70
E832330	22.3	3	11.1	1720	0.09	2.21	< 1	4.00	8.0	0.99	2.31	245	5.83	80.5	6.10	203	174	710	4190	1760	260	780	470

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS
SAMPLE	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Na
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
E832331	68.3	< 1	69.6	2190	0.66	9.98	< 1	108	2.7	3.68	264	2330	4.44	376	23.8	903	134	2910	26500	2840	60	640	70
E832332	42.7	< 1	2.61	479	0.09	0.49	< 1	25.2	0.5	0.23	20.1	95	1.71	20.5	1.64	336	49.4	570	25000	710	< 50	350	60
E832333	26.8	< 1	4.29	2020	0.08	0.75	< 1	6.07	0.5	0.28	18.3	106	3.28	26.8	1.89	544	23.4	480	21700	950	< 50	700	70
E832334	34.3	< 1	7.28	1960	0.10	1.30	< 1	5.82	0.4	0.50	10.1	178	2.43	45.2	3.21	1040	21.4	470	16100	470	< 50	900	70
E832335	26.9	< 1	4.98	2440	0.15	0.98	< 1	9.61	0.5	0.39	31.5	167	1.23	37.2	2.62	611	37.7	680	26600	1400	< 50	1620	80
E832336	19.7	< 1	2.96	1600	0.07	0.52	< 1	3.84	0.3	0.21	13.1	76	1.27	19.0	1.47	251	23.4	420	21100	1250	< 50	1220	70
E832337	22.1	< 1	2.64	933	0.08	0.47	< 1	5.50	0.2	0.23	34.6	76	0.34	18.2	1.49	385	33.0	600	31700	1020	< 50	2070	70
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	329		294	519	0.50	36.8		106			86.5	303		914	69.6	698	61.3				1790		
TILL-1 Cert	13000		5900.0	291000	700.0	1100.0		5600.0			2200.0	99000		38000	3900.0	98000	502000				48100.00		
TILL-1 Meas	329		294	515	0.53	36.5		104			84.3	295		899	68.6	779	61.4				1780		
TILL-1 Cert	13000		5900.0	291000	700.0	1100.0		5600.0			2200.0	99000		38000	3900.0	98000	502000				48100.00		
TILL-2 Meas	208		193	681	1.59	31.1		286			264	372	74.7	808	64.1	657	336				2260		
TILL-2 Cert	12000		7400.0	144000	1900.0	1200.0		18400.0			5700.0	77000	5000	40000	3700.0	130000	390000				38400.00		
TILL-2 Meas	211		194	674	1.64	31.6		291			282	373	78.7	829	65.6	689	349				2300		
TILL-2 Cert	12000		7400.0	144000	1900.0	1200.0		18400.0			5700.0	77000	5000	40000	3700.0	130000	390000				38400.00		
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig																		550	29200	1280	< 50	970	70
E832301 Dup																		540	29000	1310	< 50	970	80
E832302 Orig																							
E832302 Dup																							
E832303 Orig	32.1	< 1	4.99	937	0.14	0.82	< 1	7.83	0.2	0.35	14.3	110	0.59	30.2	2.52	749	44.0						
E832303 Dup	27.2	< 1	5.17	970	0.11	0.86	< 1	6.28	0.2	0.34	13.0	105	15.3	31.7	2.46	838	37.5						
E832313 Orig																							
E832313 Dup																							
E832314 Orig	39.7	< 1	2.17	366	0.09	0.34	< 1	15.8	< 0.2	0.16	13.6	79	0.34	14.1	1.25	453	54.0						
E832314 Dup	39.4	< 1	2.06	368	0.07	0.38	< 1	16.4	< 0.2	0.16	13.8	81	0.31	14.3	1.37	309	54.9						
E832327 Orig																							
E832327 Dup																							
E832330 Orig																							

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS
SAMPLE	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Na
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
E832330 Dup																							
E832332 Orig																		570	25000	710	< 50	350	60
E832332 Dup																		590	25600	720	< 50	360	60
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																		< 10	< 700	< 10	< 50	< 10	< 50
Method Blank																							
Method Blank	< 0.5	< 1	< 0.03	0.5	< 0.01	< 0.01	< 1	0.04	< 0.2	< 0.01	0.02	< 1	< 0.01	< 0.02	< 0.02	< 2	< 0.5						
Method Blank	< 0.5	< 1	< 0.03	0.5	< 0.01	< 0.01	2	0.18	< 0.2	0.01	0.03	2	< 0.01	< 0.02	0.03	< 2	< 0.5						
Method Blank																		< 10	< 700	< 10	< 50	< 10	< 50
Method Blank																		< 10	< 700	< 10	< 50	< 10	< 50
Method Blank																							

	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	Hydrox- MS	
SAMPLE	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	< 10	230	< 5	46200	30	< 100	< 2000	179	556	551	< 5000	14	120	29	23	8.6	15	39	< 10	< 5	< 20	7.9	< 200
E832302	< 10	410	< 5	35600	< 20	< 100	< 2000	199	291	286	< 5000	18	50	25	21	6.0	13	28	< 10	< 5	< 20	5.5	< 200
E832303	< 10	290	< 5	38800	20	< 100	< 2000	141	231	166	< 5000	17	< 40	19	16	5.6	8	23	< 10	< 5	< 20	4.5	< 200
E832304	< 10	240	< 5	20500	< 20	< 100	< 2000	115	163	127	< 5000	24	70	11	10	3.3	< 5	14	< 10	< 5	< 20	3.0	< 200
E832305	30	250	< 5	12300	< 20	< 100	< 2000	68	162	199	< 5000	15	80	11	8	3.2	< 5	15	< 10	< 5	< 20	2.7	< 200
E832306	< 10	220	< 5	21800	20	< 100	< 2000	124	294	472	< 5000	23	380	18	12	5.0	< 5	23	< 10	< 5	< 20	4.2	< 200
E832307	1110	14600	< 5	76400	30	< 100	< 2000	196	239	329	< 5000	11	< 40	13	7	5.0	< 5	20	< 10	< 5	< 20	3.4	1100
E832308	230	800	< 5	63500	< 20	< 100	< 2000	131	84	85	< 5000	27	< 40	3	2	3.7	< 5	7	< 10	< 5	< 20	1.6	200
E832309	60	700	< 5	54000	30	< 100	< 2000	104	157	318	< 5000	38	< 40	8	6	3.5	< 5	8	< 10	< 5	< 20	2.5	< 200
E832310	< 10	1040	< 5	13200	50	1300	< 2000	34	3870	1610	< 5000	147	12300	897	437	109	129	797	< 10	< 5	< 20	170	< 200
E832311	20	370	< 5	52100	< 20	< 100	< 2000	187	101	231	< 5000	43	< 40	6	5	3.4	< 5	11	< 10	< 5	< 20	2.0	< 200
E832312	< 10	290	< 5	57900	< 20	< 100	< 2000	94	101	153	< 5000	18	< 40	6	4	3.0	< 5	7	< 10	< 5	< 20	2.3	< 200
E832313	50	250	< 5	71900	< 20	< 100	< 2000	102	40	159	< 5000	10	< 40	1	< 1	4.4	< 5	5	< 10	< 5	< 20	0.9	< 200
E832314	110	230	< 5	43900	20	< 100	< 2000	155	231	293	< 5000	26	< 40	19	15	4.3	10	20	< 10	< 5	< 20	4.6	< 200
E832315	< 10	330	< 5	67200	< 20	< 100	< 2000	84	145	123	< 5000	80	< 40	15	12	5.3	< 5	17	< 10	< 5	< 20	3.7	800
E832316	500	270	< 5	89500	20	< 100	< 2000	88	181	556	< 5000	22	100	22	14	7.8	< 5	21	< 10	< 5	< 20	5.6	500
E832317	6730	830	< 5	164000	70	< 100	< 2000	1470	2100	2870	< 5000	36	1590	218	154	47.3	28	260	< 10	< 5	< 20	48.8	6700
E832318	390	2900	< 5	144000	20	< 100	< 2000	168	205	612	< 5000	15	< 40	14	9	8.8	12	16	< 10	< 5	< 20	3.8	400
E832319	20	1170	< 5	97200	< 20	< 100	< 2000	97	132	874	< 5000	18	< 40	11	8	5.9	< 5	7	< 10	< 5	< 20	3.3	< 200
E832320	< 10	420	< 5	11900	< 20	100	< 2000	15	32600	65100	< 5000	39	66100	1230	489	144	328	2090	40	5	< 20	197	< 200
E832321	< 10	230	< 5	53300	< 20	< 100	< 2000	88	105	156	< 5000	15	< 40	6	5	2.8	< 5	7	< 10	< 5	< 20	2.3	< 200
E832322	40	240	< 5	39600	< 20	< 100	< 2000	62	133	101	< 5000	37	< 40	8	4	2.5	< 5	4	< 10	< 5	< 20	2.4	< 200
E832323	170	280	< 5	60800	< 20	< 100	< 2000	64	125	61	< 5000	20	< 40	4	4	3.5	< 5	5	< 10	< 5	< 20	1.6	< 200
E832324	70	390	< 5	53000	< 20	< 100	< 2000	110	118	330	< 5000	37	< 40	5	3	3.4	< 5	6	< 10	< 5	< 20	1.9	< 200



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	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	
SAMPLE	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832325	< 10	640	< 5	81000	< 20	< 100	< 2000	107	122	241	< 5000	33	< 40	7	4	3.5	< 5	11	< 10	< 5	< 20	2.1	< 200
E832326	20	11600	< 5	84600	70	< 100	< 2000	132	563	1210	< 5000	83	300	61	46	13.5	8	64	< 10	< 5	< 20	15.2	< 200
E832327	< 10	210	< 5	38200	< 20	< 100	< 2000	176	391	764	< 5000	23	100	24	18	5.0	< 5	27	< 10	< 5	< 20	6.4	< 200
E832328	290	14500	< 5	62700	590	< 100	< 2000	313	98300	2120	< 5000	6	3120	1590	923	402	735	2660	40	60	< 20	317	300
E832329	< 10	310	< 5	77300	60	< 100	< 2000	197	608	4040	< 5000	11	150	39	29	9.6	< 5	38	< 10	< 5	< 20	10.4	< 200
E832330	< 10	1050	< 5	13500	40	900	< 2000	23	4100	1690	< 5000	151	12500	956	470	123	162	874	< 10	< 5	< 20	178	< 200
E832331	80	620	< 5	113000	150	< 100	< 2000	469	17800	6770	< 5000	18	560	480	276	106	258	690	< 10	8	< 20	96.4	< 200
E832332	50	940	< 5	48400	20	< 100	< 2000	129	310	324	< 5000	23	120	28	26	7.9	< 5	37	< 10	< 5	< 20	7.3	< 200
E832333	< 10	370	< 5	35400	30	< 100	< 2000	148	341	246	< 5000	20	< 40	23	14	5.8	< 5	20	< 10	< 5	< 20	5.6	< 200
E832334	< 10	220	< 5	28400	< 20	< 100	< 2000	126	317	290	< 5000	21	50	21	13	4.4	< 5	25	< 10	< 5	< 20	5.1	< 200
E832335	< 10	250	< 5	33900	40	< 100	< 2000	127	355	540	< 5000	14	< 40	26	15	5.7	20	26	< 10	< 5	< 20	6.2	< 200
E832336	< 10	150	< 5	26600	< 20	< 100	< 2000	49	229	525	< 5000	8	< 40	16	7	4.1	< 5	13	< 10	< 5	< 20	4.0	< 200
E832337	< 10	130	< 5	40400	30	< 100	< 2000	163	345	439	< 5000	8	< 40	24	14	5.1	7	22	< 10	< 5	< 20	6.0	< 200
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		480	< 5	54500	180	< 2000		7090	3050	< 5000	26	10500		398	193					8	< 20		
TILL-1 Cert		18000	13	702000	2400.0	6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0					13000	90.0		
TILL-1 Meas		430	< 5	54800	160	< 2000		7730	3020	< 5000	26	10200		405	203					11	< 20		
TILL-1 Cert		18000	13	702000	2400.0	6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0					13000	90.0		
TILL-2 Meas		800	< 5	45500	380	4000		8060	2450	< 5000	323	15700		301	130					38	< 20		
TILL-2 Cert		26000	2	540000	4000.0	12200.0		98000	15000	74000	12000	150000		3700.0	1000.0					11000	70.0		
TILL-2 Meas		760	< 5	46300	400	4000		8000	2490	< 5000	337	16100		306	136					47	< 20		
TILL-2 Cert		26000	2	540000	4000.0	12200.0		98000	15000	74000	12000	150000		3700.0	1000.0					11000	70.0		
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig	< 10	230	< 5	46200	30	< 100	< 2000	179	556	551	< 5000	14	120	29	23	8.6	15	39	< 10	< 5	< 20	7.9	< 200
E832301 Dup	< 10	270	< 5	47700	< 20	< 100	< 2000	182	571	554	< 5000	15	100	30	23	9.1	15	42	< 10	< 5	< 20	7.2	< 200
E832302 Orig																							
E832302 Dup																							
E832303 Orig																							
E832303 Dup																							
E832313 Orig																							

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS
SAMPLE	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832313 Dup																							
E832314 Orig																							
E832314 Dup																							
E832327 Orig																							
E832327 Dup																							
E832330 Orig																							
E832330 Dup																							
E832332 Orig	50	940	< 5	48400	20	< 100	< 2000	129	310	324	< 5000	23	120	28	26	7.9	< 5	37	< 10	< 5	< 20	7.3	< 200
E832332 Dup	20	980	< 5	49900	20	< 100	< 2000	142	348	330	< 5000	23	130	31	24	8.1	< 5	37	< 10	< 5	< 20	7.9	< 200
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 10	< 40	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	< 1	< 10	< 5	< 20	< 0.5	< 200
Method Blank																							
Method Blank																							
Method Blank	< 10	40	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	< 1	< 10	< 5	< 20	0.7	< 200
Method Blank	< 10	110	< 5	< 50	< 20	< 100	< 2000	< 5	< 2	< 5	< 5000	< 5	< 40	< 1	< 1	< 0.5	< 5	2	< 10	< 5	< 20	0.6	< 200
Method Blank																							

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS
SAMPLE	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	0.8	620	< 50	< 0.5	89000	< 20	< 0.5	< 2	1940	< 100	870	< 100	83.6	< 100	80	1.3	< 100	6	< 200	600	27	< 100	26700
E832302	0.9	301	< 50	< 0.5	128000	< 20	< 0.5	< 2	910	< 100	1280	< 100	47.0	< 100	70	0.6	< 100	< 5	< 200	700	17	< 100	28500
E832303	< 0.5	234	< 50	< 0.5	99700	< 20	< 0.5	< 2	680	< 100	640	< 100	35.1	< 100	70	< 0.5	< 100	< 5	< 200	600	12	< 100	29200
E832304	0.8	168	< 50	< 0.5	25000	< 20	< 0.5	< 2	520	< 100	790	< 100	23.1	< 100	70	< 0.5	< 100	< 5	< 200	600	9	< 100	16700
E832305	0.7	158	150	< 0.5	11900	< 20	< 0.5	< 2	730	< 100	1870	< 100	27.7	< 100	150	< 0.5	< 100	< 5	< 200	600	9	< 100	10300
E832306	0.7	268	540	5.1	15000	< 20	< 0.5	< 2	2470	< 100	1590	< 100	31.7	< 100	290	< 0.5	< 100	< 5	< 200	< 200	12	< 100	11300
E832307	1.1	310	190	7.7	17300	50	< 0.5	< 2	3740	< 100	770	< 100	23.7	< 100	110	< 0.5	< 100	< 5	< 200	200	12	< 100	43600
E832308	1.4	89	290	4.9	167000	< 20	< 0.5	< 2	860	< 100	2800	< 100	4.4	< 100	300	0.5	< 100	< 5	200	300	< 2	< 100	32200
E832309	1.0	167	270	11.4	103000	< 20	< 0.5	< 2	480	< 100	2700	< 100	13.6	< 100	230	< 0.5	< 100	< 5	< 200	300	5	< 100	31300
E832310	2.6	1770	370	53.2	17000	3050	4.3	818	8730	< 100	4680	< 100	504	< 100	2920	< 0.5	< 100	74	< 200	< 200	617	< 100	9800
E832311	1.0	107	190	9.0	166000	< 20	< 0.5	< 2	740	< 100	1350	< 100	7.7	< 100	240	< 0.5	< 100	< 5	< 200	< 200	4	< 100	36000
E832312	0.8	113	150	19.9	218000	< 20	< 0.5	< 2	770	< 100	3490	< 100	7.8	< 100	130	< 0.5	< 100	< 5	< 200	< 200	5	< 100	33900
E832313	0.9	39	120	2.0	387000	< 20	< 0.5	< 2	210	< 100	940	< 100	2.7	< 100	180	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	34800
E832314	0.7	233	< 50	45.1	87900	< 20	< 0.5	< 2	600	< 100	1860	< 100	36.1	< 100	80	0.6	< 100	< 5	< 200	1000	11	< 100	26100
E832315	0.7	160	< 50	< 0.5	15100	< 20	< 0.5	< 2	730	< 100	1970	< 100	28.9	< 100	2260	0.8	< 100	< 5	< 200	1000	10	< 100	28900
E832316	0.7	287	210	7.7	84700	< 20	< 0.5	< 2	4500	< 100	1020	< 100	27.5	< 100	770	< 0.5	< 100	< 5	< 200	< 200	8	< 100	40800
E832317	3.1	4870	150	43.2	100000	< 20	< 0.5	791	26400	< 100	4530	< 100	432	< 100	1930	2.2	< 100	86	< 200	< 200	182	< 100	38800

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	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	
SAMPLE	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832318	2.4	182	150	7.7	230000 0	< 20	< 0.5	< 2	470	< 100	2440	< 100	19.2	< 100	390	< 0.5	< 100	< 5	< 200	< 200	10	< 100	36700
E832319	1.8	100	< 50	9.3	608000	< 20	< 0.5	< 2	1230	< 100	800	< 100	12.9	< 100	160	< 0.5	< 100	< 5	< 200	< 200	6	< 100	35100
E832320	< 0.5	16400	640	59.8	306000	50	16.7	< 2	2590	< 100	8020	< 100	3680	< 100	1160	< 0.5	< 100	117	< 200	< 200	2290	1200	4300
E832321	1.7	108	100	4.4	911000	< 20	< 0.5	< 2	140	< 100	1030	< 100	8.2	< 100	90	< 0.5	< 100	< 5	< 200	< 200	3	< 100	40500
E832322	1.2	133	120	1100	801000	< 20	< 0.5	< 2	150	< 100	3660	< 100	8.3	< 100	250	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	37400
E832323	0.8	98	80	7.9	1100000	< 20	< 0.5	< 2	< 80	< 100	930	< 100	9.4	< 100	280	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	39600
E832324	1.0	104	80	5.7	2210000	< 20	< 0.5	< 2	260	< 100	1580	< 100	8.3	< 100	210	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	27800
E832325	0.9	111	80	7.1	2080000	< 20	< 0.5	< 2	760	< 100	980	< 100	11.3	< 100	130	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	37400
E832326	1.5	596	100	14.4	1010000 0	< 20	< 0.5	< 2	8780	< 100	1890	< 100	78.4	< 100	280	< 0.5	< 100	< 5	< 200	< 200	39	< 100	36800
E832327	1.3	312	< 50	9.4	854000	< 20	< 0.5	< 2	1870	< 100	1750	< 100	35.2	< 100	160	< 0.5	< 100	< 5	< 200	< 200	17	< 100	23200
E832328	5.9	51800	60	123	555000	< 20	33.0	< 2	15500	< 100	1610	< 100	5860	< 100	400	1.3	< 100	66	500	< 200	2140	< 100	28900
E832329	0.7	590	100	7.6	2670000	< 20	< 0.5	< 2	6310	< 100	1040	< 100	56.7	< 100	240	< 0.5	< 100	< 5	< 200	< 200	26	< 100	32500
E832330	2.4	1860	270	55.0	173000	2940	2.3	824	9170	< 100	3720	< 100	529	< 100	2990	< 0.5	< 100	52	200	< 200	676	< 100	10400
E832331	4.2	11700	70	43.2	1040000 0	< 20	< 0.5	< 2	7510	< 100	2080	< 100	1340	< 100	170	< 0.5	< 100	< 5	< 200	< 200	575	< 100	31500
E832332	1.0	465	< 50	7.7	978000	< 20	< 0.5	< 2	1320	< 100	1500	< 100	65.6	< 100	60	0.7	< 100	< 5	< 200	400	21	< 100	24800
E832333	1.3	298	80	7.9	686000	< 20	< 0.5	< 2	1060	< 100	3140	< 100	35.3	< 100	100	< 0.5	< 100	< 5	< 200	< 200	13	< 100	36300
E832334	1.3	233	80	6.4	621000	< 20	< 0.5	< 2	1520	< 100	1460	< 100	28.8	< 100	110	< 0.5	< 100	< 5	< 200	< 200	11	< 100	24200
E832335	0.7	327	< 50	8.6	1870000	200	< 0.5	< 2	1720	< 100	770	< 100	33.6	< 100	120	< 0.5	< 100	< 5	< 200	< 200	11	< 100	44900
E832336	1.4	185	< 50	6.9	1120000	< 20	< 0.5	< 2	690	< 100	1210	< 100	22.0	< 100	60	< 0.5	< 100	< 5	< 200	< 200	5	< 100	37900
E832337	1.6	278	< 50	9.0	945000	< 20	< 0.5	< 2	1300	< 100	1680	< 100	29.9	< 100	90	< 0.5	< 100	< 5	< 200	< 200	14	< 100	37300
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas		6180	110	52.2	672000	< 20	3.2	2800	750		7380				520			331	200		870		4700
TILL-1 Cert		28000	15000	600.0	142000 00	2000	10000	26000	24000		22000				44000			7800.0	13000		5900.0		291000
TILL-1 Meas		6500	110	56.7	664000	< 20	3.6	2670	780		7700				520			315	< 200		934		4700
TILL-1 Cert		28000	15000	600.0	142000 00	2000	10000	26000	24000		22000				44000			7800.0	13000		5900.0		291000
TILL-2 Meas		3640	500	44.5	215000	90	44.9	< 2	1070		8270				3050			8	300		620		5500
TILL-2 Cert		44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0	12000		7400.0		144000
TILL-2 Meas		3770	510	42.9	216000	80	47.8	< 2	970		8360				3200			11	300		658		5700
TILL-2 Cert		44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000			800.0	12000		7400.0		144000
SdAR-M2																							

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	
SAMPLE	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
(U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig	0.8	620	< 50	< 0.5	89000	< 20	< 0.5	< 2	1940	< 100	870	< 100	83.6	< 100	80	1.3	< 100	6	< 200	600	27	< 100	26700
E832301 Dup	0.9	639	< 50	25.4	88700	< 20	< 0.5	< 2	1990	< 100	970	< 100	85.5	< 100	70	0.6	< 100	< 5	< 200	800	26	< 100	26000
E832302 Orig																							
E832302 Dup																							
E832303 Orig																							
E832303 Dup																							
E832313 Orig																							
E832313 Dup																							
E832314 Orig																							
E832314 Dup																							
E832327 Orig																							
E832327 Dup																							
E832330 Orig																							
E832330 Dup																							
E832332 Orig	1.0	465	< 50	7.7	97800	< 20	< 0.5	< 2	1320	< 100	1500	< 100	65.6	< 100	60	0.7	< 100	< 5	< 200	400	21	< 100	24800
E832332 Dup	0.6	490	< 50	16.0	104000	< 20	< 0.5	< 2	1450	< 100	1570	< 100	67.0	< 100	60	< 0.5	< 100	< 5	< 200	800	24	< 100	26700
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 2	< 50	< 0.5	< 40	< 20	< 0.5	< 2	< 80	< 100	< 20	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100
Method Blank																							
Method Blank																							
Method Blank	0.9	< 2	< 50	< 0.5	< 40	< 20	< 0.5	9	< 80	< 100	< 20	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100
Method Blank	0.5	3	< 50	2.9	140	< 20	< 0.5	7	< 80	< 100	100	< 100	< 0.5	< 100	< 10	< 0.5	< 100	< 5	< 200	< 200	< 2	< 100	< 100
Method Blank																							

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
E832301	< 0.5	6.3	< 10	1.7	< 500	5	2.7	15.0	700	< 5	288	16.5	1700	< 400	560	6600	830	< 50	1280	< 500	< 300	< 5	24900
E832302	< 0.5	4.5	< 10	4.9	< 500	4	2.1	5.9	< 500	< 5	218	12.1	7700	< 400	570	7800	900	< 50	1020	< 500	600	< 5	23100
E832303	< 0.5	4.1	< 10	< 0.5	< 500	2	1.9	< 0.5	< 500	< 5	170	8.9	4000	< 400	510	7700	1220	< 50	1040	< 500	400	8	29900
E832304	< 0.5	2.3	< 10	2.5	< 500	2	1.0	< 0.5	< 500	< 5	97.7	5.3	5000	< 400	120	4400	< 50	< 50	620	< 500	< 300	< 5	14600
E832305	< 0.5	2.4	< 10	2.1	< 500	3	0.8	1.7	< 500	< 5	90.5	5.1	6600	< 400	390	7800	70	70	400	< 500	400	8	10900
E832306	< 0.5	2.7	< 10	7.8	< 500	10	1.5	3.3	< 500	< 5	146	7.2	9400	< 400	640	5400	120	60	170	< 500	400	< 5	16600
E832307	< 0.5	2.2	< 10	25.6	< 500	25	1.6	204	< 500	< 5	148	4.6	11600	< 400	340	4200	110	80	1970	< 500	15700	5	32700
E832308	3.6	0.9	< 10	7.7	< 500	3	0.5	6.1	< 500	< 5	40.9	1.2	18900	< 400	50	3900	< 50	160	1530	< 500	900	< 5	34900

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
E832309	< 0.5	2.1	< 10	0.8	< 500	5	1.2	2.9	< 500	< 5	91.9	3.9	6500	< 400	150	5500	640	60	1390	< 500	600	< 5	28500
E832310	< 0.5	138	< 10	48.1	9200	27	56.5	47.9	700	< 5	4970	302	6900	< 400	20	2200	70	230	130	< 500	300	41	2800
E832311	< 0.5	1.2	< 10	4.5	< 500	5	1.0	1.7	< 500	< 5	65.1	3.2	13900	< 400	160	4500	130	90	1460	< 500	< 300	< 5	25600
E832312	< 0.5	1.4	< 10	4.2	< 500	4	0.8	0.9	< 500	< 5	66.0	3.5	9000	< 400	160	3800	70	60	1490	< 500	< 300	< 5	29600
E832313	< 0.5	0.6	< 10	6.1	< 500	5	< 0.5	< 0.5	< 500	< 5	28.2	< 0.5	5900	< 400	70	3800	50	70	1480	< 500	< 300	< 5	35100
E832314	< 0.5	4.4	< 10	< 0.5	< 500	3	1.5	0.7	< 500	< 5	178	8.8	4600	< 400	510	6500	310	< 50	690	< 500	< 300	6	28600
E832315	< 0.5	2.8	< 10	8.1	< 500	6	1.4	3.9	< 500	< 5	132	8.4	5500	< 400	210	10000	5060	1190	500	< 500	500	< 5	43800
E832316	< 0.5	3.7	< 10	6.9	< 500	9	2.6	3.2	< 500	< 5	268	11.8	12800	< 400	100	2600	< 50	230	400	< 500	< 300	< 5	43300
E832317	< 0.5	36.1	< 10	247	< 500	122	20.2	43.1	1300	< 5	2940	124	8500	< 400	1760	4200	640	580	430	< 500	900	7	58400
E832318	< 0.5	2.4	< 10	1.8	< 500	13	1.4	3.1	< 500	< 5	140	7.2	17900	< 400	210	7400	1110	230	1340	< 500	2100	7	31400
E832319	< 0.5	2.2	< 10	< 0.5	< 500	4	1.2	4.3	< 500	< 5	103	7.2	15100	< 400	180	8900	3280	80	1290	< 500	1200	< 5	46900
E832320	3.6	252	< 10	888	6700	8	59.4	416	< 500	2320	5700	328	28000	600	10	600	< 50	190	10	< 500	< 300	5	7600
E832321	< 0.5	1.8	< 10	7.7	< 500	< 1	1.5	1.5	< 500	< 5	77.9	1.4	4100	< 400	230	6000	170	< 50	1210	< 500	< 300	8	33300
E832322	< 0.5	1.3	< 10	4.3	< 500	1	0.7	< 0.5	< 500	< 5	67.1	1.4	5000	< 400	170	4800	70	110	1380	< 500	< 300	< 5	23100
E832323	< 0.5	1.2	< 10	7.0	< 500	4	0.8	3.1	< 500	< 5	67.7	2.0	3900	< 400	220	3800	60	130	1510	< 500	< 300	5	29300
E832324	< 0.5	1.0	< 10	6.1	< 500	6	0.7	6.8	< 500	< 5	64.1	1.3	13000	< 400	130	5200	80	110	1240	< 500	< 300	8	31300
E832325	< 0.5	1.3	< 10	14.4	< 500	10	1.0	8.5	< 500	< 5	86.7	2.9	5300	< 400	200	4100	110	70	1650	< 500	700	< 5	40500
E832326	< 0.5	10.2	< 10	18.2	< 500	62	6.4	23.2	< 500	< 5	636	34.9	21000	< 400	990	9400	2200	80	1420	< 500	14200	< 5	31400
E832327	< 0.5	4.4	< 10	2.3	< 500	3	2.1	2.5	< 500	< 5	262	10.7	16700	< 400	530	5200	110	< 50	330	< 500	300	< 5	23200
E832328	3.0	310	< 10	517	700	37	118	668	3100	< 5	14000	726	4600	1800	12400	14000	4610	100	640	< 500	28200	11	55400
E832329	< 0.5	7.6	< 10	29.4	< 500	17	4.3	20.3	< 500	< 5	474	23.5	6100	< 400	1630	8300	3150	< 50	420	< 500	500	12	49500
E832330	0.8	153	< 10	47.9	10300	25	59.9	51.2	600	< 5	5240	350	2600	< 400	30	2100	80	230	120	< 500	< 300	47	2800
E832331	< 0.5	87.2	< 10	62.6	1000	36	40.6	244	7200	< 5	3830	220	10700	< 400	650	5300	670	< 50	410	< 500	400	< 5	32400
E832332	< 0.5	6.2	< 10	< 0.5	< 500	5	3.0	2.1	< 500	< 5	293	15.1	5200	< 400	3270	12000	7640	< 50	410	< 500	1800	8	80000
E832333	< 0.5	4.3	< 10	< 0.5	< 500	2	1.7	5.3	< 500	< 5	203	10.6	7400	< 400	350	6300	500	< 50	410	< 500	300	8	21900
E832334	< 0.5	4.1	< 10	< 0.5	< 500	< 1	1.8	0.6	< 500	< 5	196	4.7	11700	< 400	440	6200	290	< 50	550	< 500	< 300	5	22200
E832335	< 0.5	4.9	< 10	0.5	< 500	3	2.0	5.4	< 500	< 5	239	11.6	7300	< 400	480	7700	1090	< 50	930	< 500	< 300	< 5	22500
E832336	< 0.5	2.5	< 10	< 0.5	< 500	< 1	1.6	2.0	< 500	< 5	139	5.5	4400	< 400	310	5500	1040	< 50	730	< 500	< 300	< 5	18200
E832337	< 0.5	4.3	< 10	< 0.5	< 500	3	2.5	9.5	< 500	< 5	226	9.7	8500	< 400	480	5600	430	< 50	1170	< 500	< 300	5	21000
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	0.7	150		14.7	3900			156	1500		4820	304	6400	< 400			1250				1200	10	21200
TILL-1 Cert	700.0	1100.0		5600.0	59900.00			2200.0	99000		38000	3900.0	98000	502000			48100.00				18000	13	702000
TILL-1 Meas	< 0.5	153		16.7	3600			158	1400		4730	310	6800	< 400									
TILL-1 Cert	700.0	1100.0		5600.0	59900.00			2200.0	99000		38000	3900.0	98000	502000									

	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	Hydrox-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb
TILL-2 Meas	3.6	111		182	8700			469	600	6	3090	219	7200	1100			4590				6000	5	28800
TILL-2 Cert	1900.0	1200.0		18400.0	53000.00			5700.0	77000	5000	40000	3700.0	130000	390000			38400.00				26000	2	540000
TILL-2 Meas	2.2	123		198	8800			490	600	< 5	3200	229	7500	1100									
TILL-2 Cert	1900.0	1200.0		18400.0	53000.00			5700.0	77000	5000	40000	3700.0	130000	390000									
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig	< 0.5	6.3	< 10	1.7	< 500	5	2.7	15.0	700	< 5	288	16.5	1700	< 400									
E832301 Dup	< 0.5	6.3	< 10	0.9	< 500	5	2.8	14.2	700	< 5	293	15.6	2600	< 400									
E832302 Orig																							
E832302 Dup																							
E832303 Orig																							
E832303 Dup																							
E832313 Orig															70	3800	50	70	1480	< 500	< 300	< 5	35100
E832313 Dup															70	3600	50	70	1440	< 500	< 300	< 5	34500
E832314 Orig																							
E832314 Dup																							
E832327 Orig															530	5200	110	< 50	330	< 500	300	< 5	23200
E832327 Dup															540	5400	110	< 50	330	< 500	< 300	< 5	24400
E832330 Orig																							
E832330 Dup																							
E832332 Orig	< 0.5	6.2	< 10	< 0.5	< 500	5	3.0	2.1	< 500	< 5	293	15.1	5200	< 400									
E832332 Dup	< 0.5	5.9	< 10	< 0.5	< 500	6	2.8	2.3	< 500	< 5	304	17.6	5700	< 400									
Method Blank																							
Method Blank																							
Method Blank															< 10	< 500	< 50	< 50	< 10	< 500	< 300	< 5	< 300
Method Blank															< 10	< 500	< 50	< 50	< 10	< 500	< 300	< 5	< 300
Method Blank	< 0.5	< 0.5	< 10	< 0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	< 500	< 400									
Method Blank																							
Method Blank																							
Method Blank	< 0.5	< 0.5	< 10	0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	< 500	< 400									
Method Blank	< 0.5	< 0.5	20	< 0.5	< 500	< 1	< 0.5	< 0.5	< 500	< 5	< 0.5	< 0.5	500	< 400									
Method Blank																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	< 50	< 40	2000	50	2460	790	< 500	14	800	107	57	38	200	165	< 300	29	< 200	19	< 1000	< 2	1530	< 1000	6
E832302	< 50	< 40	800	110	1540	370	< 500	21	< 600	93	52	34	200	127	< 300	38	< 200	18	< 1000	2	810	< 1000	7

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832303	< 50	< 40	1200	80	1250	240	< 500	22	< 600	79	41	29	230	111	< 300	28	< 200	14	< 1000	< 2	720	< 1000	6
E832304	< 50	< 40	3900	70	700	160	< 500	29	< 600	38	21	14	120	58	< 300	13	< 200	8	< 1000	< 2	390	< 1000	4
E832305	< 50	< 40	1100	80	960	350	< 500	19	< 600	57	30	21	90	71	< 300	16	< 200	12	< 1000	3	550	1000	2
E832306	< 50	< 40	2000	110	1180	370	< 500	22	< 600	67	38	25	150	101	< 300	23	< 200	14	< 1000	< 2	700	< 1000	3
E832307	< 50	< 40	6300	60	1250	190	< 500	15	< 600	79	38	29	310	122	< 300	25	< 200	14	3000	3	950	< 1000	3
E832308	< 50	< 40	2100	30	380	< 50	< 500	31	< 600	22	11	11	270	31	< 300	7	< 200	4	2000	< 2	220	< 1000	< 1
E832309	< 50	< 40	2100	40	530	190	< 500	40	< 600	33	14	15	250	43	300	10	< 200	6	< 1000	< 2	320	< 1000	< 1
E832310	< 50	< 40	< 300	40	80	130	< 500	54	2300	17	12	5	30	18	300	8	< 200	4	< 1000	2	50	< 1000	1
E832311	< 50	< 40	2300	60	710	140	< 500	49	< 600	30	21	18	230	52	300	15	< 200	7	< 1000	< 2	330	< 1000	1
E832312	< 50	< 40	2900	40	1400	90	< 500	20	< 600	29	16	13	220	49	300	12	< 200	6	< 1000	2	1160	< 1000	< 1
E832313	< 50	< 40	600	20	520	80	< 500	10	< 600	26	13	11	320	44	400	11	< 200	5	< 1000	< 2	260	< 1000	< 1
E832314	< 50	< 40	< 300	100	1100	450	< 500	31	< 600	76	39	27	280	100	400	25	< 200	14	< 1000	< 2	570	< 1000	3
E832315	< 50	< 40	1800	90	810	220	< 500	83	< 600	60	31	26	400	91	400	20	< 200	12	< 1000	3	510	< 1000	3
E832316	< 50	< 40	< 300	40	750	280	< 500	23	600	71	35	27	370	99	300	28	< 200	14	< 1000	2	610	< 1000	5
E832317	60	< 40	4300	590	7720	1270	< 500	25	31900	695	345	278	590	1190	400	80	< 200	127	3000	3	11100	< 1000	52
E832318	< 50	< 40	2600	70	720	200	< 500	15	< 600	50	26	18	260	77	400	14	< 200	10	< 1000	3	460	< 1000	2
E832319	< 50	< 40	1200	40	770	450	< 500	23	< 600	47	27	17	390	68	400	15	< 200	9	< 1000	< 2	400	< 1000	1
E832320	< 50	< 40	< 300	30	1970	32700	< 500	49	12900	9	10	9	70	61	400	10	< 200	4	< 1000	< 2	1040	< 1000	< 1
E832321	< 50	< 40	500	40	790	100	< 500	28	< 600	47	23	18	270	65	400	16	< 200	8	< 1000	3	400	< 1000	2
E832322	< 50	< 40	< 300	50	730	< 50	< 500	47	< 600	41	17	15	200	59	400	13	< 200	8	< 1000	< 2	370	< 1000	1
E832323	< 50	< 40	< 300	40	780	< 50	< 500	26	< 600	45	18	18	280	78	400	19	< 200	9	< 1000	< 2	420	< 1000	< 1
E832324	< 50	< 40	500	20	590	190	< 500	44	< 600	36	18	13	290	50	400	7	< 200	6	< 1000	< 2	320	< 1000	< 1
E832325	< 50	< 40	< 300	40	680	190	< 500	47	< 600	44	24	18	370	66	300	13	< 200	8	< 1000	< 2	360	< 1000	< 1
E832326	< 50	< 40	< 300	50	1800	780	< 500	91	1400	188	104	53	270	225	400	44	< 200	35	< 1000	< 2	1230	< 1000	13
E832327	< 50	< 40	3200	130	1400	500	< 500	31	< 600	99	59	37	220	137	400	36	< 200	17	< 1000	2	740	< 1000	7
E832328	720	110	9000	270	362000	2260	23000	13	83600	6050	2960	2270	1300	11400	600	541	< 200	1110	3000	7	134000	< 1000	333
E832329	90	< 40	< 300	130	4870	3300	1000	17	3200	283	150	94	450	412	600	59	< 200	54	< 1000	3	2840	< 1000	22
E832330	< 50	< 40	< 300	40	60	130	< 500	57	2300	19	13	5	40	18	500	8	< 200	4	< 1000	2	40	< 1000	< 1
E832331	< 50	< 40	< 300	100	1610	460	< 500	35	1100	121	56	42	300	163	400	43	< 200	24	< 1000	< 2	1140	< 1000	6
E832332	210	80	600	310	61400	3700	7400	28	8400	1560	778	543	1060	2810	400	239	< 200	281	1000	9	29300	< 1000	91
E832333	60	< 40	< 300	70	910	170	< 500	23	< 600	58	29	21	180	91	400	25	< 200	10	< 1000	< 2	500	< 1000	3
E832334	< 50	< 40	< 300	80	1420	160	< 500	23	< 600	86	42	31	190	129	300	29	< 200	16	< 1000	2	720	< 1000	2
E832335	< 50	< 40	< 300	100	1050	340	< 500	21	< 600	79	36	28	210	105	< 300	29	< 200	14	< 1000	3	610	< 1000	3
E832336	< 50	< 40	< 300	60	780	350	< 500	13	< 600	52	24	18	190	71	< 300	12	< 200	9	< 1000	3	410	< 1000	< 1
E832337	50	< 40	< 300	90	1150	360	< 500	9	< 600	68	37	27	200	104	300	19	< 200	13	< 1000	3	580	< 1000	2
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
TILL-1 Meas	70		3300		5970	420	1200	23	12000		444	257				33	< 200				6070	< 1000	44
TILL-1 Cert	2400.0		6400.0		71000	18000	65000	1000.0	47000		3600.0	1300.0				13000	90.0				28000	15000	600.0
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	480		14000		13200	1230	4800	771	35100		425	213				188	< 200				4750	2000	41
TILL-2 Cert	4000.0		12200.0		98000	15000	74000	12000	150000		3700.0	1000.0				11000	70.0				44000	47000	600.0
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig																							
E832301 Dup																							
E832302 Orig																							
E832302 Dup																							
E832303 Orig																							
E832303 Dup																							
E832313 Orig	< 50	< 40	600	20	520	80	< 500	10	< 600	26	13	11	320	44	400	11	< 200	5	< 1000	< 2	260	< 1000	< 1
E832313 Dup	< 50	< 40	600	< 20	510	80	< 500	10	< 600	28	14	14	330	41	400	8	< 200	6	< 1000	< 2	270	< 1000	< 1
E832314 Orig																							
E832314 Dup																							
E832327 Orig	< 50	< 40	3200	130	1400	500	< 500	31	< 600	99	59	37	220	137	400	36	< 200	17	< 1000	2	740	< 1000	7
E832327 Dup	80	< 40	< 300	110	1500	530	< 500	31	< 600	107	52	35	230	145	500	39	< 200	20	< 1000	2	740	< 1000	6
E832330 Orig																							
E832330 Dup																							
E832332 Orig																							
E832332 Dup																							
Method Blank																							
Method Blank																							
Method Blank	< 50	< 40	< 300	< 20	< 40	< 50	< 500	< 2	< 600	< 5	2	< 5	< 20	< 5	< 300	< 5	< 200	1	< 1000	< 2	< 20	< 1000	3
Method Blank	< 50	< 40	300	< 20	< 40	< 50	< 500	< 2	< 600	< 5	4	< 5	< 20	6	< 300	< 5	< 200	1	< 1000	< 2	< 20	< 1000	2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							



	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832301	98800	1470	< 20	1110	2000	< 1000	< 100	292	< 100	130	< 1	< 100	< 20	< 300	< 700	180	20100	< 3	22	< 200	300	< 100	8
E832302	143000	500	< 20	790	< 1000	1000	< 100	191	< 100	140	< 1	< 100	< 20	< 300	< 700	150	25500	< 3	20	< 200	400	< 100	6
E832303	116000	190	< 20	630	1000	< 1000	< 100	158	< 100	150	1	< 100	< 20	< 300	< 700	130	28600	< 3	16	< 200	200	< 100	5
E832304	26100	100	< 20	300	< 1000	< 1000	< 100	76	< 100	160	2	< 100	< 20	< 300	< 700	50	16500	< 3	8	< 200	200	< 100	3
E832305	16100	90	< 20	450	2000	1000	< 100	121	< 100	310	2	< 100	150	< 300	< 700	80	13500	< 3	12	< 200	200	< 100	4
E832306	14600	120	< 20	570	2000	< 1000	< 100	140	< 100	320	1	< 100	50	< 300	< 700	90	10900	< 3	14	< 200	200	< 100	5
E832307	9700	5940	< 20	760	3000	< 1000	< 100	192	< 100	110	2	< 100	70	< 300	< 700	150	21500	< 3	16	< 200	400	< 100	6
E832308	110000	3790	< 20	200	2000	< 1000	< 100	46	< 100	290	< 1	< 100	< 20	< 300	< 700	40	19900	< 3	5	< 200	< 100	< 100	1
E832309	70700	920	< 20	270	2000	< 1000	< 100	63	< 100	220	< 1	< 100	40	< 300	< 700	40	19700	< 3	7	< 200	100	< 100	3
E832310	1500	4360	< 20	50	3000	1000	< 100	11	< 100	2230	< 1	< 100	100	< 300	< 700	20	6100	< 3	3	< 200	< 100	< 100	2
E832311	112000	710	< 20	310	3000	< 1000	< 100	76	< 100	230	1	< 100	< 20	< 300	< 700	50	21400	< 3	8	< 200	200	< 100	3
E832312	148000	2220	< 20	250	3000	2000	< 100	60	< 100	140	< 1	< 100	< 20	< 300	< 700	50	20700	< 3	6	< 200	100	< 100	1
E832313	202000	1020	< 20	260	4000	< 1000	< 100	62	< 100	180	< 1	< 100	< 20	< 300	< 700	50	20500	< 3	6	< 200	100	< 100	3
E832314	103000	150	< 20	540	4000	< 1000	< 100	138	< 100	180	1	< 100	< 20	< 300	< 700	100	24800	< 3	15	< 200	200	< 100	5
E832315	18100	160	< 20	490	4000	2000	< 100	125	< 100	5040	< 1	< 100	< 20	< 300	< 700	100	27000	< 3	12	< 200	200	< 100	3
E832316	37100	310	< 20	590	5000	< 1000	< 100	133	< 100	830	< 1	< 100	< 20	< 300	< 700	120	22600	< 3	15	< 200	300	< 100	4
E832317	304000	370	< 20	8190	19000	2000	< 100	2080	< 100	1970	2	< 100	70	900	< 700	1290	22600	< 3	147	< 200	1300	100	44
E832318	446000	400	< 20	410	3000	1000	< 100	98	< 100	390	< 1	< 100	< 20	< 300	< 700	70	26400	< 3	11	< 200	200	< 100	4
E832319	178000	500	< 20	350	4000	< 1000	< 100	92	< 100	190	< 1	< 100	< 20	< 300	< 700	60	27000	< 3	10	< 200	100	< 100	3
E832320	7400	140	30	650	3000	4000	< 100	204	< 100	1840	2	< 100	320	< 300	< 700	80	1500	22	4	< 200	400	< 100	1
E832321	63300	170	< 20	350	3000	< 1000	< 100	90	< 100	110	2	< 100	< 20	< 300	< 700	80	29000	< 3	10	< 200	200	< 100	4
E832322	54400	220	< 20	310	3000	< 1000	< 100	83	< 100	260	1	< 100	< 20	< 300	< 700	60	23400	< 3	9	< 200	200	< 100	2
E832323	66100	420	< 20	370	3000	< 1000	< 100	94	< 100	280	1	< 100	< 20	< 300	< 700	70	21100	< 3	11	< 200	200	< 100	3
E832324	139000	780	< 20	260	3000	< 1000	< 100	69	< 100	220	1	< 100	< 20	< 300	< 700	40	19600	< 3	8	< 200	100	< 100	3
E832325	144000	860	< 20	370	3000	< 1000	< 100	90	< 100	140	< 1	< 100	< 20	< 300	< 700	70	22100	< 3	9	< 200	200	< 100	3
E832326	371000	780	20	1260	7000	< 1000	< 100	313	< 100	290	2	< 100	70	500	< 700	240	24900	< 3	33	< 200	700	< 100	14
E832327	63200	150	< 20	720	4000	< 1000	< 100	174	< 100	160	2	< 100	< 20	300	< 700	160	17100	< 3	20	< 200	300	< 100	7
E832328	40300	260	600	85500	32000	2000	< 100	24700	< 100	470	8	< 100	620	6600	3500	12700	26900	< 3	1340	< 200	12500	< 100	355
E832329	217000	260	50	2420	9000	< 1000	< 100	631	< 100	250	1	< 100	50	600	< 700	450	25600	< 3	55	< 200	1000	< 100	20
E832330	1600	4240	< 20	50	4000	< 1000	< 100	12	< 100	2330	2	< 100	110	< 300	< 700	< 10	6100	< 3	4	< 200	< 100	< 100	2
E832331	104000	240	< 20	1040	4000	1000	< 100	248	< 100	120	< 1	< 100	30	< 300	< 700	180	23000	< 3	25	< 200	500	< 100	8
E832332	442000	350	410	20800	10000	2000	< 100	5720	< 100	200	1	< 100	80	1400	800	3130	28300	10	342	< 200	3500	< 100	101
E832333	49100	230	< 20	450	3000	2000	< 100	112	< 100	100	1	< 100	< 20	< 300	< 700	90	27200	< 3	11	< 200	200	< 100	3
E832334	45700	230	< 20	660	2000	1000	< 100	163	< 100	120	1	< 100	< 20	< 300	< 700	150	21200	< 3	18	< 200	200	< 100	5
E832335	143000	590	< 20	560	2000	< 1000	< 100	139	< 100	110	1	< 100	< 20	< 300	< 700	110	32500	< 3	15	< 200	200	< 100	5
E832336	84400	960	< 20	400	2000	< 1000	< 100	99	< 100	60	1	< 100	20	< 300	< 700	70	30200	< 3	10	< 200	100	< 100	3
E832337	68400	1730	< 20	580	2000	1000	< 100	142	< 100	100	1	< 100	< 20	< 300	< 700	110	25000	< 3	16	< 200	200	< 100	6
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas	149000	90	70	6020	1000	2000				560			740	1300		1190	3000	< 3	165		600		
TILL-1 Cert	142000	2000	10000	26000	24000	22000				44000			7800.0	13000		5900.0	291000	700.0	1100.0		5600.0		
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	77200	730	530	4370	2000	5000				5620			70	1700		950	4300	44	160		2200		
TILL-2 Cert	780000	14000	20000	36000	32000	31000				143000			800.0	12000		7400.0	144000	1900.0	1200.0		18400.0		
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832301 Orig																							
E832301 Dup																							
E832302 Orig																							
E832302 Dup																							
E832303 Orig																							
E832303 Dup																							
E832313 Orig	202000	1020	< 20	260	4000	< 1000	< 100	62	< 100	180	< 1	< 100	< 20	< 300	< 700	50	20500	< 3	6	< 200	100	< 100	3
E832313 Dup	211000	1020	< 20	230	3000	< 1000	< 100	61	< 100	170	2	< 100	< 20	< 300	< 700	50	20200	< 3	6	< 200	100	< 100	2
E832314 Orig																							
E832314 Dup																							
E832327 Orig	63200	150	< 20	720	4000	< 1000	< 100	174	< 100	160	2	< 100	< 20	300	< 700	160	17100	< 3	20	< 200	300	< 100	7
E832327 Dup	66700	150	< 20	750	4000	< 1000	< 100	177	< 100	160	2	< 100	< 20	300	< 700	150	17600	< 3	20	< 200	300	< 100	7
E832330 Orig																							
E832330 Dup																							
E832332 Orig																							
E832332 Dup																							
Method Blank																							
Method Blank																							
Method Blank	< 300	< 40	< 20	< 20	< 1000	< 1000	< 100	< 5	< 100	< 20	3	< 100	< 20	< 300	< 700	< 10	< 100	< 3	< 1	< 200	< 100	< 100	< 1
Method Blank	< 300	< 40	< 20	< 20	1000	< 1000	< 100	< 5	< 100	< 20	2	< 100	< 20	< 300	< 700	< 10	< 100	< 3	< 1	< 200	< 100	< 100	< 1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

## Results

## Activation Laboratories Ltd.

## Report: A17-07438

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	
SAMPLE	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
E832301	600	2500	< 30	550	45	4000	900	0.002	< 1	0.020	0.2	< 0.1	11	0.025	0.22	0.18	0.01	0.02	3.09	< 0.1	4	4	128
E832302	300	1300	< 30	480	42	13000	1000	0.002	< 1	0.030	0.3	< 0.1	8	0.026	0.16	0.18	0.01	0.05	2.39	< 0.1	2	5	194
E832303	< 200	1100	< 30	390	30	8000	700	0.001	< 1	0.032	0.1	< 0.1	7	0.026	0.16	0.13	0.01	0.03	2.42	< 0.1	2	4	146
E832304	< 200	500	< 30	200	19	10000	400	< 0.001	< 1	0.028	0.2	< 0.1	7	0.030	0.11	0.10	0.01	0.02	2.00	< 0.1	1	4	38
E832305	< 200	1100	< 30	310	24	13000	500	0.002	< 1	0.016	2.2	< 0.1	7	0.043	0.07	0.11	0.01	0.03	0.81	< 0.1	3	5	19
E832306	< 200	1000	< 30	350	35	7000	600	0.002	< 1	0.023	0.4	< 0.1	3	0.039	0.03	0.13	0.01	0.02	0.57	< 0.1	1	4	16
E832307	7200	3300	80	400	27	11000	1000	0.002	< 1	0.061	0.3	< 0.1	32	0.031	0.37	0.16	0.02	0.03	4.99	< 0.1	4	6	17
E832308	200	300	< 30	120	12	10000	100	0.001	< 1	0.039	0.4	< 0.1	24	0.030	0.27	0.07	0.03	0.02	3.52	< 0.1	1	3	167
E832309	< 200	400	< 30	170	13	5000	300	0.001	< 1	0.044	1.0	< 0.1	19	0.031	0.26	0.09	0.02	0.02	3.39	< 0.1	2	4	106
E832310	< 200	400	< 30	950	9	< 1000	300	0.220	< 1	0.032	1.5	< 0.1	3	0.286	0.27	1.18	0.09	0.91	0.93	1.6	35	17	163
E832311	< 200	600	< 30	160	21	8000	400	< 0.001	< 1	0.043	0.3	< 0.1	14	0.030	0.28	0.12	0.02	0.03	3.64	< 0.1	1	4	181
E832312	< 200	600	30	150	12	6000	300	< 0.001	< 1	0.030	0.2	< 0.1	18	0.029	0.25	0.08	0.01	0.02	3.45	< 0.1	1	5	206
E832313	< 200	600	< 30	130	12	3000	200	< 0.001	< 1	0.051	0.4	< 0.1	26	0.029	0.29	0.09	0.02	0.02	3.68	< 0.1	2	3	390
E832314	< 200	1100	< 30	370	33	9000	700	< 0.001	< 1	0.027	0.3	< 0.1	9	0.034	0.17	0.21	0.02	0.03	3.24	< 0.1	3	5	191
E832315	< 200	400	130	320	26	10000	500	< 0.001	< 1	0.049	0.7	< 0.1	8	0.048	0.10	0.09	0.17	0.03	2.94	< 0.1	2	5	28
E832316	< 200	< 200	50	340	36	10000	800	0.002	< 1	0.035	0.3	< 0.1	9	0.029	0.10	0.14	0.04	0.02	3.77	< 0.1	2	4	82
E832317	400	3100	120	4170	295	6000	2400	< 0.001	< 1	0.065	0.4	< 0.1	13	0.032	0.09	0.49	0.09	0.07	4.01	0.4	8	7	967
E832318	< 200	500	30	280	23	15000	400	0.001	< 1	0.063	0.5	< 0.1	15	0.027	0.22	0.12	0.04	0.04	2.88	< 0.1	2	3	2130
E832319	< 200	700	< 30	290	20	14000	300	< 0.001	< 1	0.034	0.2	< 0.1	13	0.028	0.19	0.06	0.01	0.02	2.63	< 0.1	1	2	569
E832320	< 200	< 200	6220	50	7	13000	500	0.095	< 1	0.146	15.4	< 0.1	3	0.040	0.31	0.57	0.46	0.06	0.49	3.0	31	15	178
E832321	< 200	800	< 30	230	21	2000	300	0.001	< 1	0.040	0.3	< 0.1	13	0.024	0.22	0.13	0.01	0.02	3.06	< 0.1	2	3	94
E832322	< 200	700	< 30	180	16	3000	300	0.001	< 1	0.044	0.4	< 0.1	15	0.027	0.26	0.13	0.02	0.02	3.21	< 0.1	2	4	81
E832323	200	700	< 30	200	22	4000	400	< 0.001	< 1	0.058	0.4	< 0.1	13	0.027	0.30	0.14	0.03	0.03	3.91	< 0.1	2	3	112
E832324	400	500	< 30	160	14	8000	200	< 0.001	< 1	0.043	0.3	< 0.1	14	0.030	0.24	0.10	0.02	0.03	3.04	< 0.1	1	3	225
E832325	400	700	< 30	210	21	4000	400	0.001	< 1	0.037	0.3	< 0.1	16	0.027	0.31	0.11	0.02	0.02	4.02	< 0.1	1	5	229
E832326	300	1200	80	1000	97	18000	1500	0.002	< 1	0.032	0.3	< 0.1	14	0.023	0.21	0.24	0.02	0.03	2.96	< 0.1	2	9	947
E832327	< 200	1300	< 30	510	43	20000	900	0.001	< 1	0.027	0.1	< 0.1	6	0.026	0.07	0.18	0.01	0.03	2.03	< 0.1	2	6	84
E832328	9400	16100	70	30100	2200	2000	17300	0.009	< 1	0.082	0.6	0.6	7	0.028	0.12	2.15	0.02	0.08	3.77	4.5	15	27	60
E832329	300	2600	< 30	1500	139	4000	1700	0.002	< 1	0.041	0.2	< 0.1	7	0.026	0.08	0.37	0.01	0.03	2.96	0.2	3	6	282
E832330	< 200	400	< 30	120	13	< 1000	400	0.223	< 1	0.031	1.5	< 0.1	4	0.289	0.28	1.19	0.09	0.76	0.94	1.5	35	17	155
E832331	< 200	1500	< 30	600	57	10000	1300	0.009	< 1	0.076	0.4	< 0.1	6	0.027	0.08	0.59	0.02	0.07	2.68	0.4	21	13	1190
E832332	2600	21000	60	7300	609	6000	9900	0.002	< 1	0.022	0.3	< 0.1	10	0.024	0.09	0.18	0.01	0.04	2.79	< 0.1	2	6	146
E832333	< 200	800	40	290	30	6000	600	< 0.001	< 1	0.027	0.2	< 0.1	11	0.023	0.08	0.11	0.01	0.03	2.21	< 0.1	2	4	66
E832334	< 200	1300	< 30	400	32	7000	700	0.002	< 1	0.034	0.1	< 0.1	8	0.023	0.10	0.14	0.01	0.02	1.58	< 0.1	2	4	58
E832335	< 200	1400	< 30	370	32	5000	800	0.001	< 1	0.030	0.2	< 0.1	12	0.026	0.17	0.16	0.01	0.03	2.73	< 0.1	3	4	196
E832336	< 200	600	< 30	210	20	3000	400	< 0.001	< 1	0.027	0.2	< 0.1	10	0.024	0.14	0.11	0.01	0.02	2.28	< 0.1	1	4	114
E832337	< 200	1200	< 30	360	35	8000	700	< 0.001	< 1	0.016	0.1	< 0.1	9	0.027	0.24	0.18	0.01	0.03	3.32	< 0.1	2	4	102

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
GXR-1 Meas								0.005	< 1	0.044	5.1	0.6	13	0.059	0.15	0.44	0.04	1520	0.84	0.7	76	8	928
GXR-1 Cert								0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas								0.131	2	0.129	9.2	1.3	5	0.164	1.79	3.34	2.21	18.4	0.92	7.1	79	58	142
GXR-4 Cert								0.29	1.77	0.120	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155
GXR-6 Meas								< 1	0.034	26.8	0.6	6	0.083	0.43	> 8.00	1.36	0.17	0.15	24.0	164	79	1070	
GXR-6 Cert								0.0160	0.0350	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	
TILL-1 Meas	200	2000		4110	347	3000	600																
TILL-1 Cert	2200.0	99000		38000	3900.0	98000	502000																
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas	900	5100	910	3480	334	11000	5200																
TILL-2 Cert	5700.0	77000	5000	40000	3700.0	130000	390000																
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas											12.6	5.0					1.04		1.8	16	9		
SdAR-M2 (U.S.G.S.) Cert											17.9	6.6					1.05		4.1	25.2	49.6		
E832301 Orig																							
E832301 Dup																							
E832302 Orig								0.002	< 1	0.030	0.3	< 0.1	8	0.026	0.16	0.18	0.01	0.05	2.39	< 0.1	2	5	194
E832302 Dup								0.002	< 1	0.033	0.3	< 0.1	8	0.025	0.17	0.19	0.01	0.03	2.53	< 0.1	3	5	199
E832303 Orig																							
E832303 Dup																							
E832313 Orig	< 200	600	< 30	130	12	3000	200																
E832313 Dup	< 200	600	< 30	130	11	3000	200																
E832314 Orig																							
E832314 Dup																							
E832327 Orig	< 200	1300	< 30	510	43	20000	900																
E832327 Dup	< 200	1300	< 30	510	47	20000	900																
E832330 Orig								0.223	< 1	0.031	1.5	< 0.1	4	0.289	0.28	1.19	0.09	0.76	0.94	1.5	35	17	155
E832330 Dup								0.208	< 1	0.030	1.4	< 0.1	4	0.281	0.27	1.15	0.08	0.92	0.90	1.4	34	16	152
E832332 Orig								0.002	< 1	0.022	0.3	< 0.1	10	0.024	0.09	0.18	0.01	0.04	2.79	< 0.1	2	6	146
E832332 Dup								0.002	< 1	0.025	0.3	< 0.1	10	0.025	0.09	0.20	0.01	0.05	2.81	< 0.1	3	6	159
Method Blank								< 0.001	< 1	0.001	< 0.1	< 0.1	4	0.014	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	< 1	< 1	< 1
Method Blank								< 0.001	< 1	< 0.001	< 0.1	< 0.1	< 1	0.014	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	< 1	< 1	< 1
Method Blank	< 200	< 200	< 30	< 10	2	< 1000	< 100																
Method Blank	< 200	< 200	< 30	< 10	2	< 1000	< 100																
Method Blank																							

	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	PYRO-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce
DESCRIPTION	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832301	0.35	1.6	9.1	8.79	6.4	< 0.02	< 0.1	< 0.1	0.8	41.3	0.95	1.3	0.1	2.02	0.023	< 0.02	0.11	0.20	< 0.02	0.11	58.6	2.3	3.65
E832302	0.25	0.8	4.7	3.98	14.5	0.13	< 0.1	1.1	1.0	43.1	0.75	1.1	0.1	0.68	0.021	< 0.02	0.17	0.21	0.02	0.19	47.2	1.5	2.66
E832303	0.25	0.5	3.2	3.44	9.1	< 0.02	< 0.1	1.4	0.8	46.5	0.57	0.8	0.1	0.27	0.019	< 0.02	0.12	0.20	< 0.02	0.15	51.3	1.1	1.82
E832304	0.05	0.4	3.2	5.21	11.1	0.07	< 0.1	0.6	0.7	26.8	0.35	0.4	< 0.1	0.14	0.021	< 0.02	0.14	0.20	< 0.02	0.14	30.4	0.7	1.24
E832305	0.08	0.7	3.5	2.58	11.6	0.26	0.1	1.1	0.7	16.4	0.28	0.5	0.1	0.22	0.014	< 0.02	0.18	0.37	< 0.02	0.04	22.6	0.5	0.99
E832306	0.04	0.6	3.5	3.17	7.3	0.27	0.1	1.0	0.6	14.2	0.36	0.3	0.1	0.23	0.028	< 0.02	0.16	0.23	< 0.02	0.04	30.2	0.8	1.34
E832307	0.16	0.6	17.2	9.61	23.1	< 0.02	< 0.1	33.4	0.6	58.0	0.96	1.6	0.1	8.67	0.023	< 0.02	0.16	0.64	< 0.02	0.11	82.8	2.0	2.57
E832308	0.22	0.2	3.7	2.11	10.3	< 0.02	< 0.1	3.5	1.0	41.4	0.29	0.5	0.1	4.92	0.017	< 0.02	0.15	0.20	< 0.02	0.14	58.3	0.6	1.11
E832309	0.30	0.6	2.8	5.52	9.8	< 0.02	< 0.1	2.0	1.1	43.0	0.39	0.4	0.1	1.62	0.017	< 0.02	0.21	0.25	< 0.02	0.18	65.4	0.7	1.22
E832310	1.50	5.8	18.5	33.1	24.9	2.90	< 0.1	7.3	11.3	41.1	7.99	21.9	0.2	4.69	1.07	0.02	0.74	2.29	0.02	0.44	36.2	3.3	7.46
E832311	0.14	0.3	2.2	3.48	11.7	< 0.02	< 0.1	0.2	0.9	49.0	0.40	0.5	0.1	0.83	0.019	< 0.02	0.20	0.19	< 0.02	0.14	60.7	0.8	1.55
E832312	0.08	0.2	2.1	1.74	6.8	< 0.02	< 0.1	0.3	0.5	39.6	0.31	0.4	< 0.1	2.28	0.010	< 0.02	0.14	0.17	< 0.02	0.05	57.9	0.5	0.91
E832313	0.12	0.4	1.2	2.59	7.7	< 0.02	< 0.1	< 0.1	0.8	46.3	0.36	0.4	< 0.1	1.20	0.020	< 0.02	0.15	0.18	< 0.02	0.07	77.9	0.7	1.27
E832314	0.21	1.2	4.4	4.52	11.8	< 0.02	< 0.1	1.1	1.0	58.6	0.77	0.6	0.1	0.22	0.023	< 0.02	0.18	0.21	< 0.02	0.15	73.4	1.4	2.62
E832315	0.93	0.7	5.5	4.93	11.5	< 0.02	< 0.1	1.8	7.6	47.5	0.46	0.5	0.1	0.23	0.018	< 0.02	0.19	0.23	< 0.02	0.21	82.8	0.8	1.31
E832316	0.08	0.7	15.5	15.4	10.3	< 0.02	< 0.1	0.6	1.9	55.5	1.09	0.9	0.1	0.27	0.022	< 0.02	0.16	0.35	< 0.02	0.11	98.7	1.4	1.79
E832317	0.31	3.9	59.9	90.4	8.8	< 0.02	< 0.1	3.6	3.4	53.1	9.06	2.0	0.1	0.52	0.106	< 0.02	0.18	1.17	0.03	0.12	165	18.0	12.3
E832318	0.40	0.8	1.6	2.72	17.6	< 0.02	< 0.1	7.5	1.5	46.8	0.52	0.4	0.1	0.59	0.028	< 0.02	0.19	0.19	< 0.02	0.17	135	0.9	1.57
E832319	0.64	0.9	2.2	1.86	15.9	< 0.02	< 0.1	3.4	0.7	41.1	0.32	0.3	< 0.1	0.53	0.017	< 0.02	0.13	0.16	0.02	0.09	92.6	0.5	1.02
E832320	2.26	102	10.3	244	67.7	3.51	< 0.1	< 0.1	53.4	10.5	16.8	22.9	1.8	1.32	0.409	0.03	25.0	0.73	< 0.02	0.71	71.6	125	236
E832321	0.13	0.3	1.0	1.98	2.6	< 0.02	< 0.1	0.7	1.0	55.4	0.47	0.7	0.1	0.29	0.020	< 0.02	0.16	0.16	< 0.02	0.20	62.6	0.9	1.72
E832322	0.09	0.2	1.7	2.36	6.8	< 0.02	< 0.1	< 0.1	1.2	47.1	0.44	0.5	0.1	0.33	0.017	< 0.02	0.19	0.17	< 0.02	0.27	46.5	0.9	1.71
E832323	0.09	0.2	1.6	2.56	5.4	< 0.02	< 0.1	0.3	1.4	49.9	0.49	0.5	0.1	0.53	0.018	< 0.02	0.14	0.19	< 0.02	0.22	66.7	1.0	1.75
E832324	0.08	0.5	1.6	2.39	14.8	< 0.02	< 0.1	0.8	1.0	37.3	0.36	0.3	< 0.1	0.96	0.023	< 0.02	0.14	0.18	0.02	0.21	56.9	0.8	1.46
E832325	0.14	0.5	4.9	4.28	6.2	< 0.02	< 0.1	2.3	0.7	49.2	0.52	0.7	0.1	1.25	0.020	< 0.02	0.13	0.22	< 0.02	0.19	88.5	1.0	1.77
E832326	0.56	1.6	16.4	15.2	21.6	< 0.02	< 0.1	36.1	0.8	45.8	1.35	1.4	0.1	1.17	0.150	< 0.02	0.16	0.57	< 0.02	0.21	81.0	1.5	2.23
E832327	0.09	1.0	4.2	5.09	15.9	0.20	< 0.1	1.6	0.7	29.8	0.79	0.7	0.1	0.17	0.076	< 0.02	0.17	0.19	< 0.02	0.15	44.9	1.3	2.32
E832328	0.69	3.2	39.5	122	4.7	0.41	< 0.1	29.9	2.5	40.4	31.9	7.5	0.7	0.28	0.203	0.02	0.19	0.97	0.02	0.18	74.6	137	353
E832329	0.52	5.0	13.4	16.7	5.8	< 0.02	< 0.1	0.6	1.2	44.1	1.95	1.3	0.1	0.36	0.038	< 0.02	0.15	0.28	< 0.02	0.17	84.8	3.5	5.76
E832330	1.52	5.7	19.7	33.2	25.0	3.08	< 0.1	7.7	11.5	42.1	8.06	21.1	0.2	4.82	1.10	< 0.02	0.70	2.38	< 0.02	0.46	33.8	3.4	7.42
E832331	1.23	8.9	13.9	18.4	12.3	< 0.02	< 0.1	1.5	1.6	40.8	7.27	4.9	0.5	0.70	0.072	< 0.02	0.22	0.25	0.02	0.24	116	26.2	51.2
E832332	0.24	1.0	5.9	13.8	15.2	< 0.02	< 0.1	5.2	0.7	41.9	1.02	1.5	0.1	0.43	0.044	< 0.02	0.27	0.34	< 0.02	0.15	62.2	1.9	2.66
E832333	0.18	0.4	2.4	3.37	9.2	< 0.02	< 0.1	0.4	0.5	44.0	0.45	0.5	0.1	0.24	0.030	< 0.02	0.15	0.19	< 0.02	0.09	41.1	0.9	1.54

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce
DESCRIPTION	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832334	0.09	0.4	3.6	3.32	10.2	0.14	< 0.1	1.4	0.6	29.8	0.55	0.7	0.1	0.31	0.022	< 0.02	0.18	0.18	< 0.02	0.12	35.4	1.0	1.84
E832335	0.27	0.7	3.1	3.24	7.9	0.03	< 0.1	1.2	0.8	54.5	0.56	0.9	0.1	0.67	0.011	< 0.02	0.20	0.16	< 0.02	0.13	41.6	1.1	1.79
E832336	0.28	0.8	1.9	2.43	5.3	< 0.02	< 0.1	0.8	0.4	48.0	0.34	0.4	< 0.1	0.81	0.015	< 0.02	0.13	0.15	< 0.02	0.08	34.7	0.7	1.33
E832337	0.29	0.7	4.6	4.59	8.0	< 0.02	< 0.1	< 0.1	0.5	50.5	0.61	0.4	0.1	1.50	0.014	< 0.02	0.14	0.14	< 0.02	0.06	50.2	1.0	1.93
GXR-1 Meas	26.0	8.7	45.1	1220	742	2.51		414	2.8	232	25.1	10.3	0.2	18.4	30.4	0.81	24.3	93.5	14.1	2.69	262	6.0	11.0
GXR-1 Cert	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	3.36	15.7	44.4	6860	71.7	12.9		106	116	94.0	11.8	9.2	0.4	308	3.55	0.24	5.87	3.54	0.98	2.22	40.6	53.5	104
GXR-4 Cert	3.09	14.6	42.0	6520	73.0	20.0		98.0	160	221	14.0	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102
GXR-6 Meas	5.74	14.2	25.5	65.5	115	7.08		246	77.1	36.5	6.19	14.8	0.1	1.75	0.242	0.06	1.03	2.36	0.05	3.02	866	11.2	29.9
GXR-6 Cert	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas		13.0	52.7	231	707	2.17			23.7	24.7	15.3	6.7	4.3	12.4						0.75	117	40.7	81.2
SdAR-M2 (U.S.G.S.) Cert		12.4	48.8	236.00 00	760	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8
E832301 Orig																							
E832301 Dup																							
E832302 Orig	0.25	0.8	4.7	3.98	14.5	0.13	< 0.1	1.1	1.0	43.1	0.75	1.1	0.1	0.68	0.021	< 0.02	0.17	0.21	0.02	0.19	47.2	1.5	2.66
E832302 Dup	0.27	0.9	5.0	4.30	15.7	0.20	< 0.1	1.4	1.1	46.2	0.80	1.6	0.1	0.80	0.014	< 0.02	0.19	0.22	< 0.02	0.21	46.6	1.5	2.82
E832303 Orig																							
E832303 Dup																							
E832313 Orig																							
E832313 Dup																							
E832314 Orig																							
E832314 Dup																							
E832327 Orig																							
E832327 Dup																							
E832330 Orig	1.52	5.7	19.7	33.2	25.0	3.08	< 0.1	7.7	11.5	42.1	8.06	21.1	0.2	4.82	1.10	< 0.02	0.70	2.38	< 0.02	0.46	33.8	3.4	7.42
E832330 Dup	1.49	5.6	17.3	32.6	24.1	2.98	< 0.1	7.5	11.1	40.4	7.59	17.2	0.2	4.55	1.02	< 0.02	0.63	2.16	< 0.02	0.43	29.5	3.2	7.02
E832332 Orig	0.24	1.0	5.9	13.8	15.2	< 0.02	< 0.1	5.2	0.7	41.9	1.02	1.5	0.1	0.43	0.044	< 0.02	0.27	0.34	< 0.02	0.15	62.2	1.9	2.66
E832332 Dup	0.27	1.0	6.8	17.5	17.0	< 0.02	< 0.1	5.9	0.8	44.2	1.06	1.3	0.1	0.45	0.051	< 0.02	0.20	0.39	< 0.02	0.17	61.3	2.1	2.84
Method Blank	< 0.01	< 0.1	< 0.1	0.11	0.1	0.17	0.1	< 0.1	< 0.1	< 0.5	0.01	0.3	< 0.1	0.06	< 0.002	< 0.02	0.11	0.11	< 0.02	< 0.02	7.0	< 0.5	0.01
Method Blank	< 0.01	< 0.1	< 0.1	< 0.01	0.2	0.13	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01	0.1	< 0.1	0.04	< 0.002	< 0.02	0.09	0.06	< 0.02	< 0.02	7.0	< 0.5	0.02
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce
DESCRIPTION	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832301	0.25	0.4	1.68	0.3	0.6	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.21	0.2	0.7
E832302	0.24	0.3	1.25	0.3	0.6	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.74	0.2	0.4
E832303	0.15	0.2	0.90	0.2	0.6	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	0.62	< 0.1	0.1
E832304	0.14	0.1	0.56	0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	0.97	< 0.1	0.1
E832305	0.10	0.1	0.46	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	1.8	< 0.02	2.22	< 0.1	< 0.1
E832306	0.13	0.2	0.60	0.1	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	1.14	< 0.1	0.1
E832307	0.25	0.4	1.51	0.3	2.8	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.007	< 0.5	< 0.02	0.90	0.3	7.1
E832308	0.17	0.1	0.54	0.1	0.5	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	2.13	< 0.1	0.2
E832309	0.14	0.2	0.60	0.1	0.6	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	2.2	< 0.02	2.33	< 0.1	0.1
E832310	0.05	1.0	4.94	1.5	< 0.1	0.3	1.8	0.3	1.7	0.4	0.9	0.1	0.6	0.1	0.5	< 0.05	0.2	< 0.001	2980	< 0.02	5.72	0.5	0.1
E832311	0.19	0.2	0.67	0.1	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	1.49	< 0.1	0.1
E832312	0.09	0.1	0.46	0.1	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	3.79	< 0.1	0.1
E832313	0.15	0.2	0.60	0.1	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	1.53	< 0.1	0.1
E832314	0.28	0.3	1.28	0.2	0.4	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	< 0.1	0.001	< 0.5	< 0.02	1.79	0.1	0.1
E832315	0.13	0.2	0.75	0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.4	< 0.001	< 0.5	< 0.02	4.53	< 0.1	0.1
E832316	0.11	0.3	1.35	0.3	0.5	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	1.12	0.2	0.2
E832317	1.48	3.4	12.9	2.3	1.2	0.4	2.1	0.2	1.4	0.3	0.8	0.1	0.7	0.1	0.1	< 0.05	0.2	0.007	0.8	0.07	7.49	0.8	0.7
E832318	0.18	0.2	0.78	0.2	0.6	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	3.51	< 0.1	0.1
E832319	0.12	0.1	0.47	< 0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	0.5	< 0.02	1.17	< 0.1	0.1
E832320	< 0.01	23.6	90.5	15.2	< 0.1	0.6	10.9	1.0	4.8	0.8	1.6	0.2	1.0	0.1	0.4	< 0.05	> 200	< 0.001	< 0.5	0.13	19.3	86.0	3.5
E832321	0.12	0.2	0.79	0.2	0.5	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	1.0	< 0.001	< 0.5	< 0.02	0.68	0.1	0.1
E832322	0.06	0.2	0.76	0.2	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.4	< 0.001	< 0.5	< 0.02	1.43	< 0.1	0.1
E832323	0.09	0.2	0.81	0.2	0.4	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	< 0.02	1.62	< 0.1	0.2
E832324	0.14	0.2	0.61	0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	0.001	< 0.5	< 0.02	2.58	< 0.1	0.4
E832325	0.16	0.2	0.86	0.2	0.5	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	0.001	< 0.5	< 0.02	1.67	< 0.1	0.5
E832326	0.16	0.4	1.51	0.3	0.9	< 0.1	0.3	< 0.1	0.2	0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.7	0.002	2.8	< 0.02	2.48	0.2	0.3
E832327	0.19	0.3	1.17	0.2	0.4	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	< 0.02	1.15	0.1	0.1
E832328	0.39	23.8	82.7	14.2	2.7	2.1	11.9	1.2	6.3	1.2	3.0	0.4	2.3	0.3	0.2	< 0.05	0.2	0.017	4.6	< 0.02	4.62	5.7	8.4
E832329	0.20	0.8	2.95	0.5	0.7	0.1	0.5	0.1	0.4	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.94	0.7	0.3
E832330	0.05	1.0	4.97	1.5	< 0.1	0.3	1.8	0.3	1.7	0.4	0.9	0.1	0.6	0.1	0.5	< 0.05	0.3	< 0.001	2980	< 0.02	5.51	0.5	0.1
E832331	0.57	5.0	18.7	2.9	0.8	0.5	2.6	0.3	1.5	0.3	0.7	0.1	0.6	0.1	0.1	< 0.05	0.1	0.001	1.2	< 0.02	3.12	1.1	2.4
E832332	0.18	0.4	1.62	0.3	0.6	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	3.1	< 0.02	2.80	0.2	0.2
E832333	0.14	0.2	0.75	0.2	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	1.5	< 0.02	3.61	< 0.1	0.1

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832334	0.13	0.2	0.89	0.2	0.7	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	1.94	< 0.1	0.1
E832335	0.13	0.2	0.89	0.2	0.4	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	0.6	< 0.02	1.22	0.1	0.2
E832336	0.07	0.2	0.62	0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.46	< 0.1	0.1
E832337	0.19	0.2	0.92	0.2	0.4	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	2.21	0.2	0.2
GXR-1 Meas	2.89		6.63	2.5	13.6	0.5	3.8	0.7	4.7			0.4	2.0	0.3	0.2	< 0.05	181		3160	0.19	806	1.7	31.4
GXR-1 Cert	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9
DH-1a Meas																						> 200	2570
DH-1a Cert																						910	2629
GXR-4 Meas	0.42		39.2	6.5	4.8	1.3	4.9	0.5	2.7			0.1	0.8	0.1	0.3	< 0.05	13.0		399	2.88	47.1	17.2	5.0
GXR-4 Cert	0.860		45.0	6.60	5.60	1.63	5.25	0.360	2.60			0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20
GXR-6 Meas	0.08		11.0	2.3	< 0.1	0.5	2.0	0.3	1.5				0.7	0.1	0.4	< 0.05	< 0.1		65.2	1.82	99.3	4.1	0.8
GXR-6 Cert	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
SdAR-M2 (U.S.G.S.) Meas	5.27	8.7	34.2	6.5		0.6	5.0	0.6	3.6	0.7	1.8	0.3	1.5	0.2	0.2	< 0.05	1.2				822	11.7	1.6
SdAR-M2 (U.S.G.S.) Cert	5.1	11.0	39.4	7.18		1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53
E832301 Orig																							
E832301 Dup																							
E832302 Orig	0.24	0.3	1.25	0.3	0.6	< 0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.74	0.2	0.4
E832302 Dup	0.25	0.4	1.41	0.2	0.6	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	< 0.5	< 0.02	1.74	0.3	0.4
E832303 Orig																							
E832303 Dup																							
E832313 Orig																							
E832313 Dup																							
E832314 Orig																							
E832314 Dup																							
E832327 Orig																							
E832327 Dup																							
E832330 Orig	0.05	1.0	4.97	1.5	< 0.1	0.3	1.8	0.3	1.7	0.4	0.9	0.1	0.6	0.1	0.5	< 0.05	0.3	< 0.001	2980	< 0.02	5.51	0.5	0.1
E832330 Dup	0.04	1.0	4.72	1.4	< 0.1	0.3	1.8	0.3	1.6	0.3	0.8	0.1	0.6	0.1	0.4	< 0.05	0.2	< 0.001	2920	< 0.02	5.33	0.4	0.1
E832332 Orig	0.18	0.4	1.62	0.3	0.6	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	0.001	3.1	< 0.02	2.80	0.2	0.2
E832332 Dup	0.16	0.5	1.72	0.3	0.5	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.2	0.001	1.6	< 0.02	3.10	0.3	0.2
Method Blank	< 0.01	< 0.1	< 0.02	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1
Method Blank																							
Method Blank																							



	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	ISE	pH Meter
SAMPLE	Hg	Conduc	Paste
DESCRIPTION	ppb	tivity μS/cm	pH -
E832301	100	150	5.64
E832302	120	153	5.61
E832303	90	143	5.42
E832304	90	111	5.67
E832305	80	127	4.06
E832306	100	149	3.94
E832307	100	350	6.90
E832308	90	446	6.60
E832309	90	145	6.43
E832310	80	438	9.57
E832311	80	176	6.60
E832312	90	190	6.39
E832313	80	273	6.64
E832314	120	145	5.02
E832315	110	324	5.46
E832316	100	158	5.75
E832317	170	387	6.24
E832318	120	248	6.08
E832319	90	184	6.03
E832320	400	223	8.73
E832321	100	141	6.21
E832322	90	144	6.44
E832323	100	201	6.43
E832324	100	214	6.32
E832325	100	190	6.61
E832326	100	140	6.04
E832327	100	127	4.55
E832328	170	392	6.06
E832329	130	197	5.48
E832330	60	440	9.51
E832331	180	212	5.48

	AR-MS	ISE	pH Meter
SAMPLE	Hg	Conduc tivity	Paste pH
DESCRIPTION	ppb	$\mu$ S/cm	-
E832332	100	142	5.21
E832333	90	145	5.34
E832334	100	133	5.20
E832335	90	136	5.88
E832336	90	102	5.67
E832337	80	106	5.72
GXR-1 Meas	3490		
GXR-1 Cert	3900		
DH-1a Meas			
DH-1a Cert			
GXR-4 Meas	120		
GXR-4 Cert	110		
GXR-6 Meas	70		
GXR-6 Cert	68.0		
TILL-1 Meas			
TILL-1 Cert			
TILL-1 Meas			
TILL-1 Cert			
TILL-2 Meas			
TILL-2 Cert			
TILL-2 Meas			
TILL-2 Cert			
SdAR-M2 (U.S.G.S.) Meas	1050		
SdAR-M2 (U.S.G.S.) Cert	1440.00		
E832301 Orig			
E832301 Dup			
E832302 Orig	120		
E832302 Dup	130		
E832303 Orig			
E832303 Dup			
E832313 Orig			
E832313 Dup			
E832314 Orig			
E832314 Dup			
E832327 Orig			
E832327 Dup			
E832330 Orig	60		
E832330 Dup	60		
E832332 Orig	100		
E832332 Dup	100		

	AR-MS	ISE	pH Meter
SAMPLE	Hg	Conduc tivity	Paste pH
DESCRIPTION	ppb	µS/cm	-
Method Blank	60		
Method Blank	50		
Method Blank			
Method Blank			
Method Blank			
Method Blank		1.00	
Method Blank			
Method Blank			
Method Blank			
Method Blank			
Method Blank			7.91



**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07439  
**Invoice Date:** 08-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

15 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-07439**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07439  
**Invoice Date:** 08-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

15 Rock samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-4 Total Digestion ICP/MS

REPORT **A17-07439**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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Results

Activation Laboratories Ltd.

Report: A17-07439

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
E832451	< 0.005	10	20.5	1.20	4.31	7.49	0.25	7.34	0.2	232	395	2660	7.42	1.4	100	1.7	0.3	0.6	70	0.05	1.12	49.3	0.52	
E832452	0.007	8	46.5	2.74	0.15	7.51	2.18	1.21	< 0.1	6	14.0	120	0.75	1.7	12.6	0.6	3.0	0.2	80	0.20	5.48	2.0	0.24	
E832453	< 0.005	< 1	39.6	2.00	0.23	6.64	2.67	0.84	< 0.1	3	12.8	279	1.16	1.0	2.2	1.3	1.8	0.4	60	< 0.05	6.12	1.4	0.34	
E832454	< 0.005	< 1	6.1	2.39	3.82	7.79	0.15	6.37	0.2	223	73.4	1570	11.1	2.3	92.2	3.2	0.5	1.1	110	< 0.05	0.14	49.3	0.86	
E832455	0.014	< 1	15.8	1.93	3.76	8.03	0.28	6.55	0.1	304	89.9	1650	11.4	2.5	109	3.2	0.6	1.1	90	< 0.05	0.62	54.4	0.83	
E832456	< 0.005	< 1	16.9	0.35	10.7	4.88	0.06	7.44	< 0.1	157	1140	1640	8.54	0.9	546	1.0	0.1	0.4	100	< 0.05	0.07	58.9	0.31	
E832457	< 0.005	< 1	45.7	1.61	1.67	8.00	> 5.00	1.65	< 0.1	78	166	1330	4.10	5.1	100	1.1	1.2	0.4	80	< 0.05	6.45	22.8	0.62	
E832458	< 0.005	< 1	7.6	1.35	5.62	4.69	0.07	7.61	0.3	214	397	1800	10.5	1.3	192	1.5	0.3	0.5	70	< 0.05	0.29	63.8	0.54	
E832459	0.021	< 1	5.5	1.80	4.09	4.34	0.04	2.19	0.2	105	98.6	869	9.80	2.6	34.0	1.8	0.9	0.6	80	< 0.05	0.22	16.4	0.64	
E832460	< 0.005	< 1	20.0	2.47	0.28	7.27	4.29	1.12	< 0.1	21	16.6	239	1.73	6.1	2.8	0.7	1.1	0.3	60	< 0.05	1.76	6.7	0.64	
E832461	0.008	23	7.0	1.31	5.56	5.15	0.06	7.19	0.4	266	138	1780	11.9	1.3	150	1.7	0.4	0.6	70	< 0.05	0.26	68.6	0.57	
E832462	0.005	8	13.6	0.66	5.15	6.36	0.46	7.47	0.5	267	445	1840	11.3	1.8	180	2.2	1.4	0.8	70	< 0.05	1.47	59.7	0.95	
E832463	0.139	5	7.2	0.43	11.4	2.43	0.08	6.11	0.1	135	2310	1570	9.51	0.5	736	0.8	0.1	0.3	120	< 0.05	1.12	89.8	0.33	
E832464	< 0.005	1	55.6	0.73	1.59	4.01	0.37	2.65	< 0.1	63	93.7	505	2.45	0.6	71.6	0.8	0.4	0.3	90	0.09	5.98	11.0	0.37	
E832465	< 0.005	< 1	163	0.27	1.72	6.36	1.53	4.09	0.2	79	229	1500	5.50	1.9	109	2.1	0.7	0.7	70	< 0.05	7.58	28.3	0.79	
GXR-1 Meas		7	8.0	0.05	0.21	2.05	0.05	0.91	2.7	85	14.8	902	25.4	0.5	43.3		0.9		2930	31.5	3.06	8.4	0.52	
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	
GXR-1 Meas		< 1	8.4	0.05	0.22	2.44	0.05	0.93	2.5	91	18.0	970	26.4	0.5	46.3		1.0		1930	31.2	3.08	8.7	0.55	
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
SDC-1 Meas		< 1	35.4	1.53	1.02	8.48	2.58	1.05		32	42.9	798	4.73	0.7	34.4	3.4	2.9	1.2	140		4.20	18.1	1.34	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas		2	39.0	1.60	1.07	8.77	2.63	1.13		37	59.6	869	4.89	0.7	36.3	3.5	3.3	1.3	70		4.25	18.9	1.42	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas		9	34.1	0.09	0.60	> 10.0	1.74	0.17	0.1	114	41.3	942	5.29	1.9	24.5		1.0		110	0.20	4.36	13.2	0.55	
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	
GXR-6 Meas		< 1	36.2	0.10	0.62	> 10.0	2.00	0.18	0.1	120	55.2	1000	5.43	1.9	26.2		1.1		90	0.19	4.38	13.9	0.57	
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	
DNC-1a Meas			5.0							148	172				289							61.7	0.51	
DNC-1a Cert			5.2							148	270				247							57	0.59	
DNC-1a Meas			4.9							151	199				290							61.6	0.52	
DNC-1a Cert			5.2							148	270				247							57	0.59	
SBC-1 Meas			171						0.4	213	109			3.0	88.9	3.4	3.2	1.2			8.72	22.8	1.67	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	
SBC-1 Meas			173						0.4	227	85.7			3.5	94.0	3.4	3.5	1.3			8.83	24.0	1.71	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	
SdAR-M2 (U.S.G.S.) Meas			17.1						5.4	24	51.7			4.0	52.6	2.4	6.4	0.8	1230		1.92	12.9	0.97	
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	
SdAR-M2			17.8						5.4	17	33.4			3.5	52.6	2.6	7.0	1.0	790		1.90	12.8	1.20	

Results

Activation Laboratories Ltd.

Report: A17-07439

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
(U.S.G.S.) Meas																								
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6				7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 254 Meas	2.52																							
OREAS 254 Cert	2.55																							
OREAS 218 Meas	0.554																							
OREAS 218 Cert	0.525																							
E832461 Orig	0.008																							
E832461 Dup	0.009																							
E832464 Orig		1	55.6	0.73	1.59	4.01	0.37	2.65	< 0.1	63	93.7	505	2.45	0.6	71.6	0.8	0.4	0.3	90	0.09	5.98	11.0	0.37	
E832464 Dup		< 1	56.3	0.75	1.58	3.99	0.37	2.66	< 0.1	63	72.0	511	2.44	0.4	71.7	0.8	0.4	0.3	70	0.11	6.04	11.0	0.37	
Method Blank	< 0.005																							
Method Blank		13	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.7	< 1	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	90	< 0.05	< 0.05	< 0.1	< 0.05	
Method Blank		14	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.2	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05	
Method Blank		13	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.8	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832451	0.09	0.4	92.1	15.3	2.3	5.8	17.0	55	3.6	0.63	< 0.1	1	2.6	< 0.1	66	6.2	12.7	1.5	6.6	1.7	2.4	0.4	2.7
E832452	34.6	< 0.1	22.8	23.3	< 0.1	131	8.5	30	20.2	0.74	< 0.1	1	0.1	0.2	710	9.0	17.3	1.8	5.9	1.5	1.5	0.2	1.4
E832453	0.66	< 0.1	18.5	16.7	< 0.1	62.0	12.9	70	6.9	1.08	< 0.1	2	< 0.1	< 0.1	1040	15.2	34.0	3.1	10.7	1.9	2.0	0.3	2.2
E832454	0.12	< 0.1	111	19.3	< 0.1	1.8	31.9	97	0.2	0.10	< 0.1	< 1	< 0.1	< 0.1	34	3.8	10.3	1.6	7.5	2.5	3.8	0.7	5.0
E832455	0.04	< 0.1	109	20.4	< 0.1	5.8	31.4	105	0.6	0.17	< 0.1	< 1	< 0.1	< 0.1	90	4.5	10.7	1.5	7.7	2.3	3.4	0.7	4.8
E832456	0.06	0.6	73.4	10.5	21.8	0.8	10.5	38	1.9	0.30	< 0.1	< 1	0.4	< 0.1	4	1.7	4.0	0.6	2.7	0.8	1.3	0.2	1.6
E832457	0.23	0.3	73.1	21.2	1.5	105	11.4	225	8.5	1.88	< 0.1	2	< 0.1	< 0.1	581	22.1	43.1	4.6	16.5	2.6	2.4	0.3	1.9
E832458	0.07	0.2	97.8	11.9	14.1	1.1	15.1	51	1.1	1.48	< 0.1	< 1	0.3	< 0.1	90	2.8	6.5	1.0	4.9	1.5	2.2	0.4	2.6
E832459	0.58	4.5	78.3	21.5	27.8	1.0	18.4	116	7.8	6.96	< 0.1	< 1	1.4	1.1	30	8.5	16.7	1.8	6.8	1.6	2.2	0.4	2.9
E832460	0.06	< 0.1	41.8	17.9	< 0.1	119	8.5	262	7.5	0.96	< 0.1	2	< 0.1	< 0.1	950	74.4	145	14.3	50.6	7.5	5.4	0.4	2.0
E832461	0.05	0.2	107	14.2	75.4	0.9	18.1	54	2.8	0.26	< 0.1	1	4.1	< 0.1	53	3.4	8.5	1.2	6.2	1.8	2.6	0.4	3.1
E832462	0.14	0.5	178	15.8	5.5	16.0	22.4	75	0.5	0.19	0.1	< 1	0.2	< 0.1	124	5.2	12.2	1.7	8.1	2.2	3.0	0.5	3.7
E832463	0.14	0.8	80.6	7.4	256	2.3	8.4	20	0.2	0.33	< 0.1	< 1	1.0	< 0.1	21	1.4	3.6	0.6	2.9	0.9	1.3	0.2	1.4
E832464	0.45	0.2	25.8	8.9	0.1	32.7	8.5	37	1.6	1.81	< 0.1	1	< 0.1	< 0.1	99	5.0	12.7	1.1	4.8	1.1	1.3	0.2	1.4
E832465	0.10	0.2	72.5	14.3	8.8	68.0	21.7	84	0.5	0.44	< 0.1	1	0.1	< 0.1	267	16.5	31.4	3.8	14.5	2.9	3.4	0.5	3.5
GXR-1 Meas	1310	15.8	711	8.5	441	2.5	34.0	27	0.9	16.5	0.9	25	15.7	6.1	700	8.0	14.5		8.8	2.7	4.2	0.7	4.6
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1340	17.5	765	12.8	436	2.7	36.3	28	1.0	17.3	0.9	27	25.1	7.6	719	8.0	15.0		8.9	2.9	4.3	0.7	4.9
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
SDC-1 Meas			94.4	20.3	< 0.1	94.3		27	0.5		< 1	< 0.1		657	42.5	83.1		41.7	7.9	7.1	0.9	6.0	
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00		3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SDC-1 Meas			102	23.6	< 0.1	100		25	0.3			< 1	< 0.1		691	42.5	87.1		42.7	8.5	7.6	1.0	6.4
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.19	0.4	116	22.9	229	63.0	13.3	76	1.5	0.36	< 0.1	< 1	0.6	< 0.1	1300	13.6	33.4		13.1	2.6	2.4	0.3	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.19	0.8	122	30.0	232	66.9	13.7	73	0.4	0.51	< 0.1	1	0.9	< 0.1	1380	12.6	32.8		12.9	2.5	2.3	0.3	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			63.9	15.1		2.6	18.5	44	1.4				0.3		114	4.1			5.4				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			63.3	15.0		3.0	19.1	43	1.9				0.4		115	3.9			5.2				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.63		175	22.9	22.6	119	34.6	126	13.9	2.24		4	1.0		823	52.5	101	12.2	50.7	9.7	8.6	1.0	6.4
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.68		183	27.1	24.5	126	36.3	135	19.0	1.90		4	1.2		850	51.8	104	13.2	50.5	9.6	8.9	1.1	6.7
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SdAR-M2 (U.S.G.S.) Meas	1.03		723	16.2		93.8	23.7	143	10.2	11.4					979	36.0	82.5	8.1	31.3	5.6	4.8	0.6	4.1
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	1.03		739	20.4		118	27.4	118	2.8	5.22					1050	45.4	93.5	10.8	39.0	6.7	5.8	0.8	4.8
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 254 Meas																							
OREAS 254 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832461 Orig																							
E832461 Dup																							
E832464 Orig	0.45	0.2	25.8	8.9	0.1	32.7	8.5	37	1.6	1.81	< 0.1	1	< 0.1	< 0.1	99	5.0	12.7	1.1	4.8	1.1	1.3	0.2	1.4
E832464 Dup	0.51	< 0.1	25.1	8.7	< 0.1	33.1	8.5	23	1.3	1.82	< 0.1	1	< 0.1	< 0.1	102	5.1	13.1	1.2	4.9	1.1	1.4	0.2	1.4
Method Blank																							
Method Blank	0.03	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832451	57.2	0.7	0.3	1.7	0.2	0.2	94.1	0.5	< 0.001	< 0.05	12.6	2.3	0.5
E832452	9.3	0.1	< 0.1	0.7	< 0.1	9.0	86.9	0.7	< 0.001	1.14	29.2	8.4	3.1
E832453	9.9	< 0.1	0.2	1.4	0.2	0.5	60.1	0.2	< 0.001	0.35	17.1	11.7	2.4
E832454	51.0	0.3	0.5	3.3	0.4	< 0.1	172	< 0.1	< 0.001	< 0.05	2.9	1.1	0.3
E832455	63.3	0.6	0.5	3.4	0.5	< 0.1	124	0.2	< 0.001	< 0.05	2.5	1.1	0.3
E832456	4.8	0.7	0.2	1.1	0.1	0.1	7.2	0.6	< 0.001	< 0.05	< 0.5	0.7	0.2



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832457	48.2	0.4	0.2	1.2	0.2	0.3	85.7	1.3	< 0.001	0.45	13.2	6.4	2.3
E832458	127	0.7	0.2	1.5	0.2	< 0.1	51.4	0.2	0.003	< 0.05	5.5	0.6	0.2
E832459	28.0	0.4	0.3	2.2	0.3	0.5	31.8	1.5	0.001	< 0.05	7.1	4.2	1.3
E832460	11.0	< 0.1	< 0.1	0.6	< 0.1	0.3	208	11.5	< 0.001	0.82	37.6	43.4	2.8
E832461	52.6	2.9	0.3	1.7	0.2	0.2	48.3	1.4	< 0.001	< 0.05	4.8	0.6	0.2
E832462	105	0.6	0.3	2.2	0.3	< 0.1	85.2	0.2	< 0.001	< 0.05	3.5	1.1	0.3
E832463	40.9	0.8	0.1	0.7	< 0.1	< 0.1	24.7	0.1	< 0.001	< 0.05	3.0	0.2	< 0.1
E832464	68.6	0.3	0.1	0.9	0.1	< 0.1	148	1.9	< 0.001	0.07	4.4	2.0	0.5
E832465	40.4	0.3	0.3	2.3	0.3	< 0.1	76.9	< 0.1	< 0.001	0.33	7.6	4.1	1.1
GXR-1 Meas	1190		0.3	2.3	0.3	< 0.1	291	144		0.23	710	2.4	31.9
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas	1220		0.4	2.3	0.3	< 0.1	315	156		0.27	737	2.5	33.2
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2390
DH-1a Cert												910	2629
DH-1a Meas												> 500	2570
DH-1a Cert												910	2629
SDC-1 Meas	34.2		0.5	3.3		< 0.1	159	< 0.1		0.48	22.3	10.7	2.7
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas	32.3		0.5	3.4		< 0.1	165	< 0.1		0.50	23.5	11.9	3.0
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	70.2			1.7	0.2	< 0.1	34.0	0.3		2.01	90.3	4.8	1.4
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas	72.0			1.7	0.2	< 0.1	32.7	< 0.1		2.17	96.1	4.8	1.4
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	104			2.0			139				5.1		
DNC-1a Cert	100			2.0			144				6.3		
DNC-1a Meas	105			2.0			143				5.4		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	31.7		0.5	3.4	0.4	0.6	163	1.5		0.74	33.3	14.7	5.6
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas	35.4		0.5	3.5	0.4	0.8	168	1.6		0.81	36.3	15.8	5.9
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SdAR-M2 (U.S.G.S.) Meas	251		0.4	2.6	0.3	0.2	119	0.4			761	10.4	2.1
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	244		0.4	2.8	0.4	0.2	129	0.1			786	13.8	2.5
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 254 Meas													
OREAS 254 Cert													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 218 Meas													
OREAS 218 Cert													
E832461 Orig													
E832461 Dup													
E832464 Orig	68.6	0.3	0.1	0.9	0.1	< 0.1	148	1.9	< 0.001	0.07	4.4	2.0	0.5
E832464 Dup	70.8	0.5	0.1	0.9	0.1	< 0.1	149	1.4	< 0.001	0.09	4.2	2.1	0.6
Method Blank													
Method Blank	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1



**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07441  
**Invoice Date:** 04-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

11 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 13-Conductivity Conductivity

Code 13-Paste pH Paste pH

Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A17-07441**

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:

Assays are recommended for values above the upper limit. The Au from AR-MS is only semi-quantitative. For accurate Au data, fire assay is recommended.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is stylized with loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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Results

Activation Laboratories Ltd.

Report: A17-07441

	ISE	pH Meter	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Conduc tivity	Paste pH	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
DESCRIPTION	µS/cm	-	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
E832101	78.0	5.33	0.179	< 1	0.020	57.1	0.3	7	0.049	0.84	2.37	0.15	0.21	0.43	4.0	56	65	275	2.49	15.3	53.8	25.8	47.3
E832102	58.0	4.07	0.064	< 1	0.009	2.5	< 0.1	3	0.022	0.08	0.38	0.05	0.06	0.08	0.3	19	13	54	0.41	1.1	2.8	1.67	6.1
E832103	74.0	4.17	0.159	< 1	0.024	14.0	0.1	4	0.027	0.32	1.11	0.06	0.51	0.15	1.9	79	49	115	2.13	5.0	20.1	10.6	18.6
E832104	56.0	4.60	0.128	< 1	0.012	3.8	< 0.1	3	0.021	0.11	0.45	0.02	0.20	0.13	0.7	31	23	88	0.71	1.7	6.8	3.72	6.9
E832105	43.0	4.32	0.107	< 1	0.013	7.1	0.1	3	0.019	0.14	0.84	0.03	0.14	0.09	1.0	35	25	66	0.90	2.3	9.0	6.50	7.9
E832106	56.0	4.14	0.073	< 1	0.005	1.4	< 0.1	2	0.016	0.07	0.22	0.02	0.07	0.06	0.2	22	14	46	0.44	1.3	4.4	2.36	3.5
E832107	51.0	5.64	0.087	< 1	0.010	8.9	< 0.1	3	0.023	0.17	0.50	0.07	0.07	0.25	0.9	22	16	95	0.72	2.5	6.2	3.94	13.9
E832108	54.0	5.66	0.089	< 1	0.010	11.8	< 0.1	4	0.026	0.18	0.51	0.04	0.08	0.29	0.9	22	19	92	0.75	2.6	7.7	3.87	11.7
E832109	65.0	6.30	0.108	< 1	0.019	20.7	0.1	3	0.051	0.58	1.07	0.02	0.10	0.53	0.9	31	102	107	1.60	13.5	78.6	35.9	19.7
E832110	473	9.32	0.220	< 1	0.035	1.4	0.1	5	0.247	0.18	0.89	0.07	0.88	0.88	1.5	39	18	163	1.39	5.9	18.7	32.0	25.4
E832111	43.0	4.14	0.100	< 1	0.010	1.6	< 0.1	2	0.020	0.06	0.36	0.03	0.14	0.07	0.3	29	21	37	0.46	0.8	3.1	1.51	3.9
GXR-1 Meas			0.005	< 1	0.041	3.7	0.6	11	0.043	0.12	0.27	0.03	1410	0.77	0.6	74	11	871	22.4	7.9	42.3	1090	742
GXR-1 Cert			0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760
GXR-1 Meas			0.005	< 1	0.049	4.4	0.6	13	0.050	0.12	0.33	0.03	1490	0.82	0.9	79	9	945	23.5	8.2	44.8	1110	796
GXR-1 Cert			0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760
GXR-1 Meas			0.005	< 1	0.039	3.8	0.6	12	0.044	0.11	0.28	0.03	1330	0.72	0.5	68	8	740	20.1	7.2	37.9	975	649
GXR-1 Cert			0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760
GXR-1 Meas			0.005	< 1	0.048	4.2	0.7	14	0.051	0.13	0.33	0.03	1480	0.82	0.6	75	8	886	22.5	7.8	40.0	1070	709
GXR-1 Cert			0.036	0.257	0.0650	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas			0.126	2	0.153	8.4	1.4	5	0.163	1.61	2.78	1.79	19.3	0.86	7.8	89	62	148	3.05	15.0	45.5	6390	70.2
GXR-4 Cert			0.29	1.77	0.120	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0
GXR-4 Meas			0.108	2	0.121	6.8	1.2	4	0.129	1.27	2.25	1.40	16.6	0.71	6.2	70	50	120	2.51	12.9	38.4	5380	60.0
GXR-4 Cert			0.29	1.77	0.120	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0
GXR-4 Meas			0.134	2	0.149	8.4	1.4	5	0.155	1.55	2.76	1.77	19.2	0.86	7.8	86	62	154	2.95	14.8	43.6	6240	68.1
GXR-4 Cert			0.29	1.77	0.120	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0
GXR-6 Meas				< 1	0.038	23.0	0.9	6	0.094	0.36	7.25	1.14	0.16	0.14	28.9	183	88	1140	5.63	14.8	28.0	71.5	127
GXR-6 Cert				0.0160	0.0350	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118
GXR-6 Meas				< 1	0.045	24.6	0.8	9	0.091	0.40	7.69	1.27	0.17	0.14	29.2	182	85	1170	5.58	14.8	28.9	68.7	131
GXR-6 Cert				0.0160	0.0350	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118
GXR-6 Meas				< 1	0.042	23.0	0.8	6	0.086	0.39	7.31	1.22	0.16	0.14	28.8	174	83	1060	5.41	14.1	26.6	67.1	122
GXR-6 Cert				0.0160	0.0350	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118
GXR-6 Meas				< 1	0.039	23.1	0.8	6	0.084	0.37	6.82	1.13	0.16	0.14	27.2	168	78	1080	5.56	14.5	26.8	69.1	116
GXR-6 Cert				0.0160	0.0350	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118
BL-4a Meas																							

Results

Activation Laboratories Ltd.

Report: A17-07441

	ISE	pH Meter	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Conduc tivity	Paste pH	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
DESCRIPTION	µS/cm	-	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas				< 1	0.026	10.5			0.034	0.12	4.14	0.08	0.19	0.07	38.5	151	373	330	10.1	21.4	173	268	26.3
OREAS 45d (Aqua Regia) Cert				0.045	0.035	11.9			0.031	0.144	4.860	0.097	0.30	0.09	41.50	201.0	467	400.000	13.650	26.2	176.0	345.0	30.6
OREAS 45d (Aqua Regia) Meas				< 1	0.039	15.4			0.046	0.17	5.64	0.13	0.27	0.09	50.1	214	511	452	13.9	30.1	240	346	34.9
OREAS 45d (Aqua Regia) Cert				0.045	0.035	11.9			0.031	0.144	4.860	0.097	0.30	0.09	41.50	201.0	467	400.000	13.650	26.2	176.0	345.0	30.6
SdAR-M2 (U.S.G.S.) Meas						9.2	3.7						0.86	1.5	16	9				11.5	44.7	216	681
SdAR-M2 (U.S.G.S.) Cert						18	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760
SdAR-M2 (U.S.G.S.) Meas						9.9	3.4						0.84	1.5	15	8				11.3	45.3	194	664
SdAR-M2 (U.S.G.S.) Cert						18	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760
SdAR-M2 (U.S.G.S.) Meas						11.4	4.0						1.02	2.1	18	10				13.0	51.3	242	766
SdAR-M2 (U.S.G.S.) Cert						17.9	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760
SdAR-M2 (U.S.G.S.) Meas						11.6	4.4						1.07	2.2	19	11				14.0	54.8	248	797
SdAR-M2 (U.S.G.S.) Cert						17.9	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760
Method Blank			< 0.001	< 1	0.001	< 0.1	< 0.1	1	0.013	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.06	< 0.1
Method Blank			< 0.001	< 1	0.001	0.1	< 0.1	1	0.012	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.07	< 0.1
Method Blank			< 0.001	< 1	0.001	< 0.1	< 0.1	1	0.010	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.52	< 0.1
Method Blank	2.80																						

	ISE	pH Meter	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Conduc tivity	Paste pH	Ti	S	P	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
DESCRIPTION	µS/cm	-	%	%	%	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Method Blank	2.30																						
Method Blank		6.13																					
Method Blank		6.87																					

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832101	9.21	< 0.1	6.2	27.2	12.9	3.87	9.3	3.0	0.39	0.056	< 0.02	1.18	0.04	< 0.02	4.22	77.2	10.8	22.9	0.04	2.2	8.67	1.2	< 0.1
E832102	4.12	< 0.1	< 0.1	4.6	5.5	1.41	1.6	1.1	0.31	0.025	< 0.02	0.74	< 0.02	< 0.02	0.77	20.0	6.3	13.4	0.03	1.3	5.35	0.9	< 0.1
E832103	10.1	< 0.1	17.1	11.9	8.0	2.34	4.3	2.8	0.58	0.059	< 0.02	1.14	0.10	0.03	1.67	28.5	7.0	14.1	0.06	1.4	5.37	0.8	< 0.1
E832104	4.92	< 0.1	4.3	4.0	6.9	1.73	3.8	2.7	0.30	0.041	< 0.02	0.87	< 0.02	< 0.02	1.07	19.9	7.2	15.2	0.01	1.5	6.00	0.9	< 0.1
E832105	6.12	< 0.1	1.2	3.8	5.4	1.85	5.0	2.1	0.28	0.022	< 0.02	1.02	< 0.02	< 0.02	0.60	18.2	6.3	12.4	< 0.01	1.2	4.72	0.8	< 0.1
E832106	2.50	< 0.1	0.7	5.3	3.0	1.19	2.3	1.0	0.12	0.025	< 0.02	0.42	< 0.02	< 0.02	0.74	10.5	3.2	6.65	0.01	0.7	2.63	0.4	< 0.1
E832107	3.75	< 0.1	< 0.1	17.1	11.1	2.61	2.1	1.8	0.22	0.032	< 0.02	0.65	< 0.02	< 0.02	2.91	25.4	8.6	18.1	< 0.01	1.8	7.34	1.2	< 0.1
E832108	3.48	< 0.1	< 0.1	15.6	11.4	2.41	2.0	1.8	0.18	0.034	< 0.02	0.67	< 0.02	< 0.02	2.63	28.1	8.1	15.8	0.01	1.6	6.47	1.0	< 0.1
E832109	4.15	< 0.1	< 0.1	3.9	11.2	2.48	0.6	1.1	0.18	0.035	< 0.02	0.41	< 0.02	< 0.02	0.88	41.0	10.7	40.2	0.07	2.0	7.31	0.9	< 0.1
E832110	3.19	< 0.1	6.9	8.1	30.0	8.43	18.1	0.1	4.38	1.15	< 0.02	0.71	2.02	0.02	0.52	37.8	3.1	8.03	0.02	1.0	5.17	1.4	< 0.1
E832111	5.92	< 0.1	< 0.1	3.9	5.7	2.34	2.0	1.7	0.27	0.030	< 0.02	1.10	< 0.02	< 0.02	0.78	17.5	13.3	27.1	< 0.01	2.5	9.55	1.4	< 0.1
GXR-1 Meas	3.92		398	2.0	171	26.6	9.8	0.1	15.6	28.3	0.72	23.4	81.4	13.0	2.67	174	4.9	10.1	2.61		6.26	2.0	14.7
GXR-1 Cert	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6
GXR-1 Meas	4.28		420	2.2	192	28.8	9.4	0.1	17.4	30.2	0.76	25.7	88.9	14.4	2.97	210	5.2	11.1	2.68		6.75	2.2	16.0
GXR-1 Cert	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6
GXR-1 Meas	3.32		365	1.9	151	23.8	8.1	0.1	14.7	26.4	0.68	21.8	75.8	12.0	2.55	177	4.6	9.76	2.53		5.90	2.0	13.2
GXR-1 Cert	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6
GXR-1 Meas	3.18		405	2.1	179	28.3	9.4	0.1	17.2	30.9	0.79	25.4	89.0	14.0	3.00	220	5.3	11.0	2.63		6.67	2.4	14.6
GXR-1 Cert	13.8		427	14.0	275	32.0	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	11.3		104	88.3	66.3	12.3	9.4	0.2	288	3.46	0.21	6.22	3.70	0.94	2.51	36.0	49.1	98.7	0.34		39.1	5.9	5.3
GXR-4 Cert	20.0		98.0	160	221	14.0	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60
GXR-4 Meas	9.90		87.9	77.0	56.7	10.3	7.7	0.2	251	2.95	0.17	5.10	3.14	0.76	2.10	33.2	40.9	83.4	0.22		33.8	4.8	4.4
GXR-4 Cert	20.0		98.0	160	221	14.0	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60
GXR-4 Meas	11.8		104	92.7	68.3	12.6	8.3	0.2	301	3.59	0.23	6.32	3.79	0.97	2.62	41.7	49.5	98.9	0.28		40.3	5.7	5.4
GXR-4 Cert	20.0		98.0	160	221	14.0	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60
GXR-6 Meas	11.3		250	64.3	30.4	7.12	13.8	< 0.1	1.69	0.278	0.07	1.31	2.17	0.06	3.82	1010	11.1	33.5	0.08		12.2	2.4	< 0.1
GXR-6 Cert	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	13.7		251	65.9	30.8	7.15	13.4	< 0.1	1.76	0.279	0.06	1.26	2.20	0.04	4.07	1010	11.0	33.7	0.09		12.4	2.4	0.1
GXR-6 Cert	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940
GXR-6 Meas	13.4		242	59.5	28.9	6.41	13.4	< 0.1	1.59	0.256	0.06	1.03	1.91	0.03	3.49	958	10.2	31.9	0.07		11.4	2.2	0.3
GXR-6 Cert	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940
GXR-6 Meas	13.4		237	59.1	28.1	6.54	14.0	< 0.1	1.64	0.255	0.06	1.18	1.98	0.03	3.51	952	10.6	31.6	0.08		11.5	2.2	0.2
GXR-6 Cert	35.0		330	90.0	35.0	14.0	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas	13.8		3.1	18.2	9.6	3.69					0.06	1.50				70.3	8.6	20.6					
OREAS 45d (Aqua Regia) Cert	17.9		6.50	20.9	11.0	5.08					0.085	1.950				80	9.960	24.8					
OREAS 45d (Aqua Regia) Meas	18.2		3.4	24.0	11.7	5.03					0.08	2.23				95.1	11.4	28.1					
OREAS 45d (Aqua Regia) Cert	17.9		6.50	20.9	11.0	5.08					0.085	1.950				80	9.960	24.8					
SdAR-M2 (U.S.G.S.) Meas	2.87			15.7	16.5	15.3	6.0	3.1	10.2						0.76	103	34.0	77.2	4.45	7.6	31.9	5.2	
SdAR-M2 (U.S.G.S.) Cert	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	
SdAR-M2 (U.S.G.S.) Meas	2.83			15.5	15.8	14.5	5.6	3.0	9.94						0.74	100	32.0	74.2	4.19	7.2	30.5	4.9	
SdAR-M2 (U.S.G.S.) Cert	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	
SdAR-M2 (U.S.G.S.) Meas	3.39			18.0	18.7	16.7	6.7	3.7	11.7						0.88	121	39.8	91.0	4.90	8.7	36.8	6.0	
SdAR-M2 (U.S.G.S.) Cert	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	
SdAR-M2 (U.S.G.S.) Meas	3.78			19.4	20.2	18.1	6.6	4.3	12.6						0.95	129	41.4	92.9	5.27	9.1	37.6	6.3	

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Cert	17.6			149	144	32.7	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	
Method Blank	0.16	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01	0.1	< 0.1	< 0.01	< 0.002	< 0.02	0.10	< 0.02	< 0.02	< 0.02	6.9	< 0.5	0.08	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1
Method Blank	0.14	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01	0.1	< 0.1	< 0.01	< 0.002	< 0.02	0.07	< 0.02	< 0.02	< 0.02	5.8	< 0.5	0.02	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1
Method Blank	0.14	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01	0.1	< 0.1	0.02	< 0.002	< 0.02	0.08	< 0.02	< 0.02	< 0.02	5.7	< 0.5	0.02	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS		
SAMPLE	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg			
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb			
E832101	0.3	1.1	0.1	0.7	0.1	0.4	< 0.1	0.3	< 0.1	0.2	< 0.05	0.1	< 0.001	< 0.5	0.20	10.4	4.0	0.6	170			
E832102	0.1	0.6	0.1	0.3	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.07	2.71	3.2	0.3	90			
E832103	0.2	0.6	0.1	0.4	0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.05	1.9	< 0.001	21.2	0.09	8.40	2.9	0.5	90			
E832104	0.2	0.7	0.1	0.4	0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.05	0.5	< 0.001	< 0.5	0.03	4.98	2.4	0.4	60			
E832105	0.1	0.6	0.1	0.4	0.1	0.2	< 0.1	0.2	< 0.1	0.1	< 0.05	0.1	< 0.001	< 0.5	0.02	5.05	2.8	0.5	40			
E832106	< 0.1	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.05	0.3	< 0.001	< 0.5	< 0.02	1.78	1.6	0.2	20			
E832107	0.2	0.8	0.1	0.5	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.03	4.08	5.1	0.4	20			
E832108	0.2	0.7	0.1	0.5	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.03	3.88	2.6	0.3	20			
E832109	0.2	0.8	0.1	0.4	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	4.07	2.1	0.7	30			
E832110	0.3	1.6	0.3	1.5	0.3	0.8	0.1	0.6	0.1	0.4	< 0.05	0.2	< 0.001	2880	0.12	5.93	0.5	0.1	120			
E832111	0.2	1.1	0.1	0.5	0.1	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.06	5.20	4.2	0.5	100			
GXR-1 Meas	0.5	3.1	0.6	3.7			0.3	1.9	0.2	0.2	< 0.05	149		3080	0.33	738	1.5	30.9	3390			
GXR-1 Cert	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900			
GXR-1 Meas	0.5	3.3	0.6	4.0			0.3	2.0	0.3	0.2	< 0.05	157		3510	0.36	787	1.6	33.1	3700			
GXR-1 Cert	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900			
GXR-1 Meas	0.4	2.8	0.6	3.5			0.3	1.6	0.2	0.2	< 0.05	127		2900	0.32	679	1.4	29.5	3310			
GXR-1 Cert	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900			
GXR-1 Meas	0.5	3.2	0.7	4.0			0.3	1.9	0.3	0.2	< 0.05	149		3370	0.39	762	1.6	32.8	3900			
GXR-1 Cert	0.690	4.20	0.830	4.30			0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900			
DH-1a Meas																	> 200	2420				
DH-1a Cert																	910	2629				
DH-1a Meas																	> 200	2270				
DH-1a Cert																	910	2629				
DH-1a Meas																	> 200	2360				
DH-1a Cert																	910	2629				
DH-1a Meas																	> 200	2490				
DH-1a Cert																	910	2629				
GXR-4 Meas	1.3	4.4	0.5	2.4			0.1	0.8	0.1	0.3	< 0.05	10.8		408	3.06	49.5	18.1	5.0	160			
GXR-4 Cert	1.63	5.25	0.360	2.60			0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110			
GXR-4 Meas	1.1	3.4	0.4	2.0			0.1	0.6	0.1	0.2	< 0.05	8.7		345	2.54	41.9	14.7	4.2	160			
GXR-4 Cert	1.63	5.25	0.360	2.60			0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110			



	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
GXR-4 Meas	1.3	4.4	0.5	2.3			0.1	0.8	0.1	0.3	< 0.05	10.6		524	3.17	48.8	17.8	4.9	170
GXR-4 Cert	1.63	5.25	0.360	2.60			0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110
GXR-6 Meas	0.6	1.9	0.3	1.4				0.7	0.1	0.4	< 0.05	< 0.1		67.5	2.07	107	4.0	0.8	180
GXR-6 Cert	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas	0.6	2.0	0.3	1.4				0.7	0.1	0.4	< 0.05	< 0.1		66.4	2.05	107	4.1	0.8	120
GXR-6 Cert	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas	0.6	1.7	0.2	1.3				0.7	0.1	0.4	< 0.05	< 0.1		66.2	1.92	99.5	3.8	0.8	180
GXR-6 Cert	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas	0.6	1.9	0.2	1.4				0.7	0.1	0.4	< 0.05	< 0.1		98.5	1.94	103	3.9	0.8	90
GXR-6 Cert	0.760	2.97	0.415	2.80				2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
BL-4a Meas																			1210
BL-4a Cert																			1250
BL-4a Meas																			998
BL-4a Cert																			1250
BL-4a Meas																			1210
BL-4a Cert																			1250
BL-4a Meas																			1180
BL-4a Cert																			1250
DL-1a Meas																		73.0	109
DL-1a Cert																		76.0	116
DL-1a Meas																		73.1	104
DL-1a Cert																		76.0	116
DL-1a Meas																		74.2	111
DL-1a Cert																		76.0	116
DL-1a Meas																		73.1	113
DL-1a Cert																		76.0	116
OREAS 45d (Aqua Regia) Meas														25.4		14.1	8.1	1.2	
OREAS 45d (Aqua Regia) Cert														21		17.00	11.3	1.64	
OREAS 45d (Aqua Regia) Meas														16.6		19.1	10.8	1.7	
OREAS 45d (Aqua Regia) Cert														21		17.00	11.3	1.64	
SdAR-M2 (U.S.G.S.) Meas	0.5	3.9	0.5	2.8	0.6	1.6	0.2	1.3	0.2	0.2	< 0.05	0.9				688	10.2	1.4	1020
SdAR-M2 (U.S.G.S.) Cert	1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
SdAR-M2 (U.S.G.S.) Meas	0.5	3.8	0.5	2.7	0.6	1.5	0.2	1.3	0.2	0.2	< 0.05	0.9				652	9.7	1.3	930
SdAR-M2 (U.S.G.S.) Cert	1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
SdAR-M2 (U.S.G.S.) Meas	0.6	4.5	0.6	3.2	0.7	1.8	0.2	1.5	0.2	0.2	< 0.05	0.9				781	11.5	1.6	1140

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Cert	1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
SdAR-M2 (U.S.G.S.) Meas	0.6	4.7	0.6	3.3	0.7	1.8	0.3	1.5	0.2	0.2	< 0.05	1.0				813	12.3	1.6	1270
SdAR-M2 (U.S.G.S.) Cert	1.44	6.28	0.97	5.88	1.21	3.58	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	70
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	30
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	50
Method Blank																			
Method Blank																			
Method Blank																			
Method Blank																			



**Date Submitted:** 20-Jul-17  
**Invoice No.:** A17-07442  
**Invoice Date:** 08-Aug-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

33 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 13-Conductivity Conductivity  
Code 13-Paste pH Paste pH  
Code 7-Bioleach Bioleach ICPMS  
Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A17-07442**

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:

Assays are recommended for values above the upper limit. The Au from AR-MS is only semi-quantitative. For accurate Au data, fire assay is recommended.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized and somewhat cursive.

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  
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Results

Activation Laboratories Ltd.

Report: A17-07442

	ISE	pH	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec	Biolec
SAMPLE	Conduc	Paste	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
DESCRIPTION	μS/cm	-	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832001	184	6.23	123	1250	88	22	199	0.6	123	0.09	346	11.6	0.4	227	10.9	1080	10.1	51	1.88	103	30.0	14.0	10.4
E832002	99.0	5.80	276	985	176	7	175	0.8	191	0.05	828	21.4	1.1	263	43.3	2420	90.9	114	2.09	317	70.0	32.0	25.5
E832003	26.0	5.65	279	11	39	12	3	0.4	13.9	< 0.05	502	16.8	< 0.1	134	0.74	343	9.9	89	2.02	43.0	12.3	5.41	5.34
E832004	28.0	5.68	297	11	22	7	2	0.4	22.7	0.07	363	22.7	0.1	214	0.66	240	7.4	46	1.49	67.0	11.4	5.00	4.54
E832005	170	6.36	233	15	12	113	4	0.7	22.4	< 0.05	329	23.2	< 0.1	166	0.73	346	5.9	27	4.07	57.9	14.9	6.57	6.33
E832006	166	5.80	347	810	301	22	115	0.9	122	0.23	1080	20.7	2.9	585	7.56	1240	99.2	302	10.6	397	39.5	18.0	14.7
E832007	73.0	5.06	694	144	232	34	12	0.5	29.1	0.15	603	17.4	0.7	577	2.02	347	54.0	539	1.54	139	18.5	7.66	6.94
E832008	77.0	4.98	507	194	243	34	20	0.5	25.2	0.14	635	14.6	1.0	376	2.67	240	60.4	518	0.95	155	15.9	6.90	5.97
E832009	140	6.39	141	472	89	39	18	0.5	443	0.62	829	16.5	0.4	531	13.6	1250	16.5	142	3.61	979	54.5	28.0	22.5
E832010	471	9.20	10.7	384	32	70	139	1.7	82.8	3.88	495	2.09	1.3	201	11.0	46.3	42.2	34	4.58	797	11.9	6.46	1.96
E832011	50.0	5.82	294	899	424	< 5	127	0.8	71.8	0.30	2140	18.8	1.4	72	11.8	1360	160	433	9.07	195	46.2	19.4	15.5
E832012	54.0	5.87	512	835	392	12	68	1.4	153	0.22	3980	33.9	3.8	142	4.94	2510	110	1230	5.33	463	83.2	36.5	31.2
E832013	46.0	5.87	580	902	264	14	78	1.4	72.4	0.22	4460	33.3	2.2	190	6.85	1960	132	1050	16.9	509	76.1	31.4	27.0
E832014	39.0	5.99	298	563	354	7	35	0.6	40.1	0.20	3220	13.0	1.3	237	2.84	650	51.2	488	10.1	159	31.4	15.2	10.0
E832015	51.0	5.42	414	282	441	7	39	0.5	37.1	0.16	1690	17.7	1.9	436	1.97	571	44.0	780	23.0	286	26.8	12.5	8.48
E832016	55.0	4.31	440	50	200	< 5	16	0.4	28.8	0.17	446	11.6	3.6	351	3.84	269	24.5	787	17.3	148	14.2	6.39	4.11
E832017	58.0	4.53	591	10	169	7	5	0.5	72.5	0.07	933	21.2	0.9	602	2.44	152	20.2	385	4.96	188	13.1	5.85	3.95
E832018	43.0	5.47	552	77	145	< 5	7	0.5	26.9	< 0.05	615	24.1	0.6	696	0.66	1170	17.8	479	1.38	267	36.0	15.5	13.1
E832019	101	6.40	155	1140	90	< 5	466	1.5	128	< 0.05	642	21.1	0.1	456	5.88	1160	11.7	1540	52.2	2110	87.8	44.2	31.2
E832020	437	9.93	29.1	299	56	329	38	1.0	42.1	< 0.05	1710	4.13	< 0.1	560	0.82	1870	102	29	3.68	314	23.5	9.37	8.82
E832021	29.0	5.64	363	110	186	14	33	1.2	198	0.87	455	23.4	0.4	357	1.41	109	64.3	382	15.9	224	7.37	3.69	2.17
E832022	40.0	5.45	301	49	78	8	6	0.6	85.9	< 0.05	1450	19.5	0.3	429	1.76	210	45.1	278	2.94	116	12.3	5.71	4.03
E832023	43.0	5.00	533	14	138	< 5	5	0.6	88.1	< 0.05	485	21.6	0.8	730	0.34	352	21.7	711	4.11	242	19.3	8.40	5.94
E832024	26.0	5.31	277	12	87	< 5	2	0.3	37.2	< 0.05	227	12.9	0.2	255	0.33	133	11.7	414	3.32	99.9	7.83	3.59	2.39
E832025	33.0	4.78	599	13	194	< 5	5	0.3	59.5	0.09	577	15.1	1.1	516	2.16	261	18.6	646	3.03	243	13.5	5.94	4.24
E832026	23.0	4.80	242	< 5	57	< 5	5	0.7	516	< 0.05	378	6.40	< 0.1	437	0.66	108	23.3	403	4.07	243	14.1	7.29	3.96
E832027	37.0	4.67	508	47	453	5	6	0.7	137	0.30	1520	18.2	2.0	462	2.69	333	32.0	1040	7.60	272	15.0	6.66	4.82
E832028	76.0	5.56	442	466	326	10	65	0.6	761	0.08	2030	29.3	1.3	396	4.19	456	205	937	20.5	549	21.6	10.6	6.89
E832029	45.0	5.75	213	701	254	7	84	0.8	28.1	0.11	1890	12.0	1.1	288	3.29	1030	69.4	310	5.39	169	35.9	18.4	12.0
E832030	488	9.40	10.4	414	29	75	156	1.8	91.3	5.48	602	2.14	1.0	226	11.9	47.3	41.7	29	4.61	859	11.7	6.60	1.95
E832031	46.0	6.34	244	576	385	7	65	0.9	38.3	0.27	2330	11.0	2.3	328	2.16	850	145	466	10.1	159	29.9	15.6	10.8
E832032	61.0	6.48	233	880	138	6	122	0.9	22.9	< 0.05	1890	12.3	0.5	646	5.81	1360	14.2	282	7.99	292	37.8	18.9	12.8
E832033	20.0	5.30	558	27	145	< 5	6	0.5	20.3	< 0.05	1550	25.6	0.3	880	1.71	1100	16.2	385	8.00	211	44.2	19.1	15.0
GXR-1 Meas																							
GXR-1 Cert																							
GXR-1 Meas																							
GXR-1 Cert																							
GXR-1 Meas																							
GXR-1 Cert																							
GXR-1 Meas																							
GXR-1 Cert																							
DH-1a Meas																							



	ISE	pH Meter	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Conduc tivity	Paste pH	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
DESCRIPTION	µS/cm	-	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas																							
OREAS 45d (Aqua Regia) Cert																							
OREAS 45d (Aqua Regia) Meas																							
OREAS 45d (Aqua Regia) Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
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SdAR-M2 (U.S.G.S.) Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
E832003 Orig			279	11	39	12	3	0.4	13.9	< 0.05	502	16.8	< 0.1	134	0.74	343	9.9	89	2.02	43.0	12.3	5.41	5.34
E832003 Dup			268	10	36	12	3	0.4	12.2	< 0.05	471	15.6	< 0.1	140	0.69	321	9.0	83	1.68	43.0	11.3	5.11	4.86
E832007 Orig																							
E832007 Dup																							
E832009 Orig																							
E832009 Dup																							
E832012 Orig			512	835	392	12	68	1.4	153	0.22	3980	33.9	3.8	142	4.94	2510	110	1230	5.33	463	83.2	36.5	31.2
E832012 Dup			503	806	386	12	67	1.2	152	0.15	3880	33.6	3.9	130	5.04	2410	112	1210	5.15	457	81.1	34.8	30.2
E832021 Orig			363	110	186	14	33	1.2	198	0.87	455	23.4	0.4	357	1.41	109	64.3	382	15.9	224	7.37	3.69	2.17
E832021 Dup			360	113	188	15	33	1.3	198	< 0.05	445	22.0	0.3	348	1.80	108	63.2	388	15.2	227	7.26	3.55	2.13
Method Blank																							
Method Blank																							
Method Blank																							

Results

Activation Laboratories Ltd.

Report: A17-07442

	ISE	pH Meter	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Conductivity	Paste pH	Al	Ca	Fe	K	Mg	Ag	As	Au	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
DESCRIPTION	µS/cm	-	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Method Blank																							
Method Blank		6.13																					
Method Blank		6.87																					
Method Blank			< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.27	< 0.1	< 5	< 0.05	< 0.02	0.6	< 2	< 0.01	1.5	< 0.01	< 0.01	< 0.01
Method Blank			< 0.5	< 5	< 1	< 5	< 2	< 0.2	< 0.5	< 0.05	< 1	0.62	< 0.1	< 5	< 0.05	< 0.02	0.8	< 2	< 0.01	1.4	0.07	0.04	0.03

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832001	23.2	58.3	1.11	3.05	< 0.05	5.00	98	0.2	756	35.8	1.71	4660	11	8.4	< 0.03	26.8	< 1	53.0	< 0.5	141	< 0.5	37.2	0.02
E832002	59.1	132	2.70	6.05	< 0.05	11.4	144	0.5	1250	29.5	3.60	66700	15	18.0	< 0.03	212	< 1	99.1	0.7	329	< 0.5	46.4	0.04
E832003	37.5	18.6	0.38	1.05	< 0.05	1.99	155	< 0.1	183	< 0.2	0.61	159	9	2.4	< 0.03	< 0.2	< 1	24.6	< 0.5	39.8	< 0.5	91.9	< 0.01
E832004	33.0	15.6	0.22	1.20	< 0.05	1.85	281	< 0.1	121	< 0.2	0.59	233	27	2.6	< 0.03	< 0.2	< 1	20.4	< 0.5	26.9	< 0.5	50.9	0.02
E832005	26.9	22.3	0.41	0.81	< 0.05	2.42	210	< 0.1	180	< 0.2	0.72	52.9	50	2.1	< 0.03	< 0.2	< 1	10.2	< 0.5	40.2	< 0.5	333	< 0.01
E832006	104	70.9	1.92	5.43	0.06	6.32	178	0.5	725	45.0	2.18	2460	13	30.1	< 0.03	480	< 1	120	1.5	179	< 0.5	76.6	0.02
E832007	115	22.3	0.48	2.34	0.07	3.01	198	0.3	202	14.5	0.73	1190	6	15.8	< 0.03	180	< 1	137	0.6	40.4	< 0.5	118	0.01
E832008	133	18.4	0.30	2.48	0.10	2.67	156	0.4	146	11.1	0.69	2430	6	16.2	< 0.03	169	< 1	157	0.8	29.6	< 0.5	68.8	0.02
E832009	41.5	91.3	1.57	3.81	0.06	9.45	157	0.1	762	2.6	4.46	1930	10	2.6	25.2	236	< 1	11.5	1.1	186	< 0.5	181	0.02
E832010	17.3	10.1	0.47	3.78	< 0.05	2.33	4	< 0.1	21.4	19.8	0.91	536	3230	1.7	16.6	58.5	< 1	59.4	4.4	7.12	< 0.5	334	0.02
E832011	138	75.3	2.67	5.55	< 0.05	7.42	59	0.4	901	39.6	1.90	23200	19	28.9	< 0.03	414	< 1	162	1.2	167	< 0.5	91.9	< 0.01
E832012	228	139	4.76	11.0	< 0.05	13.5	106	0.7	1220	36.1	3.73	10500	11	30.6	< 0.03	528	< 1	225	3.3	312	< 0.5	104	0.03
E832013	293	122	2.63	11.1	< 0.05	12.1	128	0.7	1100	78.9	3.25	10700	11	27.6	< 0.03	399	< 1	261	3.5	236	< 0.5	172	< 0.01
E832014	199	43.1	1.66	3.98	0.06	5.32	147	0.4	362	29.1	1.89	2640	6	24.6	< 0.03	198	< 1	140	1.3	89.6	< 0.5	81.0	< 0.01
E832015	177	35.3	1.30	3.25	0.05	4.51	177	0.5	317	29.5	1.52	691	22	24.6	< 0.03	143	< 1	89.2	1.1	68.8	< 0.5	57.2	0.02
E832016	99.7	15.9	0.41	1.99	0.06	2.45	122	0.3	166	16.3	0.70	753	10	16.0	< 0.03	133	< 1	128	0.6	29.2	< 0.5	37.8	0.02
E832017	65.0	12.4	0.47	3.11	0.09	2.20	295	0.3	84.2	2.0	0.69	674	10	8.5	< 0.03	19.2	< 1	79.9	1.1	17.1	< 0.5	87.5	< 0.01
E832018	36.5	53.4	1.07	2.67	< 0.05	5.82	290	0.2	646	0.4	1.58	185	7	4.7	< 0.03	32.4	< 1	38.2	0.7	122	< 0.5	21.7	0.01
E832019	21.6	135	2.31	7.64	< 0.05	15.4	285	0.3	1180	9.9	6.23	986	5	2.2	786	2980	< 1	3.6	2.3	275	< 0.5	53.3	0.01
E832020	79.1	73.4	2.67	5.67	0.06	3.33	2	0.1	1160	276	0.91	4850	13	12.2	< 0.03	10.2	< 1	63.2	2.8	274	< 0.5	926	0.02
E832021	46.0	7.62	0.55	3.11	0.07	1.31	280	0.2	52.9	15.5	0.51	15400	12	5.9	< 0.03	48.9	< 1	51.1	1.0	12.0	< 0.5	147	< 0.01
E832022	59.9	14.4	0.30	2.18	0.06	2.08	211	0.2	109	3.5	0.67	2030	9	3.7	< 0.03	19.6	< 1	41.3	0.7	23.9	< 0.5	63.8	0.01
E832023	30.5	22.5	0.32	3.78	0.07	3.18	425	0.3	182	5.1	1.05	190	11	4.6	< 0.03	29.5	< 1	38.0	1.3	39.1	< 0.5	48.4	0.01
E832024	14.5	9.12	0.14	2.00	0.05	1.32	188	0.1	72.1	1.6	0.48	210	8	3.2	< 0.03	4.0	< 1	17.1	0.7	15.6	< 0.5	26.7	< 0.01
E832025	129	15.7	0.44	2.42	< 0.05	2.29	289	0.3	159	6.7	0.79	228	10	15.2	< 0.03	29.4	< 1	128	0.7	28.4	< 0.5	52.0	0.02
E832026	15.8	13.2	0.27	1.67	< 0.05	2.58	292	< 0.1	53.0	5.4	0.99	105	4	0.6	< 0.03	39.8	< 1	3.6	0.6	13.3	< 0.5	38.7	< 0.01
E832027	113	18.1	0.65	2.52	0.11	2.50	177	0.4	196	20.3	0.88	468	11	21.8	< 0.03	74.4	< 1	139	0.9	34.8	< 0.5	131	< 0.01
E832028	146	27.7	1.85	2.93	0.07	3.80	220	0.5	210	66.8	1.62	6080	18	11.7	< 0.03	508	< 1	130	0.9	48.5	< 0.5	179	0.01
E832029	125	56.5	1.48	4.07	< 0.05	6.27	114	0.3	579	53.0	2.47	3150	7	22.5	< 0.03	145	< 1	85.3	1.3	130	< 0.5	92.3	< 0.01
E832030	19.2	10.2	0.22	3.55	< 0.05	2.31	4	< 0.1	21.6	20.5	0.86	554	3560	1.7	16.5	56.2	< 1	58.2	4.5	7.07	< 0.5	344	0.03
E832031	176	46.6	1.99	4.40	< 0.05	5.28	129	0.3	473	61.5	2.23	4570	16	34.0	< 0.03	150	< 1	113	1.5	113	< 0.5	121	< 0.01
E832032	78.8	59.0	1.16	4.80	< 0.05	6.67	274	0.3	615	40.9	2.90	1090	9	7.6	< 0.03	119	< 1	17.4	1.3	134	< 0.5	52.8	0.01

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS
SAMPLE	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832033	60.9	59.8	1.08	2.97	0.07	7.22	420	0.3	595	4.1	1.94	232	8	4.6	< 0.03	23.1	< 1	58.9	0.9	120	< 0.5	63.6	0.02
GXR-1 Meas																							
GXR-1 Cert																							
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GXR-4 Meas																							
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GXR-6 Meas																							
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GXR-6 Meas																							
GXR-6 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
TILL-1 Meas				4.06	0.13				1010	< 0.2	9.43	53000	15	5.8	1760	53.5		183				43.3	
TILL-1 Cert				13000	90.0				28000	15000	600.0	142000	2000	10000	26000	24000		22000				44000	
TILL-1 Meas				4.14	0.09				989	1.0	9.38	51100	15	5.5	1730	52.8		174				42.8	
TILL-1 Cert				13000	90.0				28000	15000	600.0	142000	2000	10000	26000	24000		22000				44000	
TILL-2 Meas				13.6	0.17				853	24.3	8.70	16900	124	23.8	161	81.0		373				224	
TILL-2 Cert				11000	70.0				44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000	
TILL-2 Meas				14.4	0.16				857	21.2	8.79	16200	136	23.7	164	84.9		364				224	
TILL-2 Cert				11000	70.0				44000	47000	600.0	780000	14000	20000	36000	32000		31000				143000	





	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	
SAMPLE	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Os	Pb	Pd	Pr	Pt	Rb	Re
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
E832009 Orig																							
E832009 Dup																							
E832012 Orig	228	139	4.76	11.0	< 0.05	13.5	106	0.7	1220	36.1	3.73	10500	11	30.6	< 0.03	528	< 1	225	3.3	312	< 0.5	104	0.03
E832012 Dup	227	135	4.31	11.0	< 0.05	12.9	110	0.7	1180	34.9	3.56	10200	10	30.8	< 0.03	527	< 1	217	3.1	294	< 0.5	102	0.01
E832021 Orig	46.0	7.62	0.55	3.11	0.07	1.31	280	0.2	52.9	15.5	0.51	15400	12	5.9	< 0.03	48.9	< 1	51.1	1.0	12.0	< 0.5	147	< 0.01
E832021 Dup	45.8	7.49	0.63	3.09	0.05	1.29	289	0.2	51.5	14.6	0.48	15800	12	6.0	< 0.03	47.0	< 1	48.6	0.9	11.6	< 0.5	148	< 0.01
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	0.2	< 0.03	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.01	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.01	< 0.5	< 0.1	< 0.01
Method Blank	0.1	0.10	< 0.05	< 0.04	< 0.05	< 0.01	< 1	< 0.1	< 0.01	< 0.2	0.09	< 0.1	< 2	< 0.2	< 0.03	< 0.2	< 1	< 0.1	< 0.5	0.04	< 0.5	< 0.1	0.02

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm
E832001	< 0.05	1.2	53.0	9	73.1	488	1.08	6.74	< 1	137	0.5	1.70	200	133	6.87	205	11.5	814	59.6	0.114	< 1	0.048	30.4
E832002	< 0.05	1.9	89.6	24	176	595	1.99	15.9	< 1	447	0.7	4.07	303	242	4.28	360	25.6	2680	109	0.157	< 1	0.072	46.7
E832003	< 0.05	1.5	38.6	7	24.0	80.3	0.24	2.55	< 1	31.9	0.9	0.65	27.9	69	4.18	57.2	3.99	< 2	25.3	0.092	< 1	0.060	17.5
E832004	< 0.05	1.6	45.3	18	19.0	61.8	0.19	2.29	< 1	24.1	1.0	0.60	25.0	125	8.51	53.3	3.88	< 2	29.6	0.093	< 1	0.061	18.8
E832005	< 0.05	1.8	59.0	24	28.8	73.7	0.12	3.14	< 1	15.2	1.0	0.77	35.2	161	22.1	73.8	5.01	< 2	22.0	0.085	< 1	0.059	16.7
E832006	< 0.05	1.5	51.0	9	98.8	523	2.84	8.88	< 1	221	1.4	2.33	144	350	7.17	179	15.0	324	117	0.215	< 1	0.035	53.6
E832007	< 0.05	0.8	36.6	13	26.7	276	1.77	3.58	< 1	24.6	0.4	0.90	23.7	153	17.5	77.8	5.31	177	55.7	0.101	< 1	0.021	7.8
E832008	< 0.05	1.1	47.7	14	21.4	367	1.60	3.01	< 1	33.6	0.3	0.81	16.5	221	10.2	66.2	4.82	260	67.7	0.085	< 1	0.017	6.6
E832009	< 0.05	4.8	85.9	43	114	233	0.29	11.5	< 1	112	2.2	3.81	93.0	348	10.3	348	27.1	124	99.0	0.185	< 1	0.027	56.8
E832010	< 0.05	23.3	19.8	< 1	9.39	1480	0.10	1.90	< 1	3.22	6.5	0.88	2.20	233	5.45	70.6	5.48	78	139	0.257	< 1	0.043	1.6
E832011	< 0.05	1.6	94.9	< 1	91.8	689	3.05	10.0	< 1	253	1.3	2.29	120	649	2.68	229	13.9	625	117	0.145	< 1	0.035	21.8
E832012	< 0.05	0.6	142	17	176	898	2.24	18.1	< 1	463	1.2	4.37	82.6	1330	3.32	393	27.3	267	301	0.122	< 1	0.040	23.5
E832013	< 0.05	1.0	137	8	150	976	2.20	16.4	< 1	472	1.1	3.86	84.5	855	2.83	339	23.4	600	308	0.192	< 1	0.044	36.5
E832014	< 0.05	0.2	56.8	< 1	56.2	636	2.16	6.28	< 1	194	0.6	2.07	38.3	363	1.84	148	13.4	503	102	0.123	< 1	0.020	21.5
E832015	< 0.05	3.6	64.9	6	43.1	512	2.32	5.24	< 1	108	1.3	1.65	70.2	659	2.16	128	10.3	21	87.7	0.171	< 1	0.027	78.6
E832016	< 0.05	1.7	37.1	3	18.2	167	1.83	2.55	< 1	45.7	0.9	0.81	30.1	252	2.86	62.5	4.48	100	49.5	0.196	< 1	0.011	72.4
E832017	< 0.05	3.4	51.4	10	13.9	68.4	0.76	2.36	< 1	56.2	0.7	0.76	26.6	176	0.60	58.1	4.81	13	94.3	0.117	< 1	0.018	17.5
E832018	< 0.05	1.2	83.2	21	65.5	62.0	0.51	7.43	< 1	88.6	1.3	1.93	57.7	130	1.87	170	11.9	< 2	68.8	0.140	< 1	0.049	31.8
E832019	< 0.05	6.5	202	27	174	808	0.26	18.2	< 1	152	2.8	5.80	181	92	5.31	641	40.8	< 2	200	0.071	< 1	0.041	30.1
E832020	< 0.05	15.0	35.3	5	110	1250	0.47	6.68	< 1	380	9.3	0.95	62.5	148	197	92.6	6.05	548	246	0.135	< 1	0.073	17.6
E832021	< 0.05	2.6	42.4	27	9.31	153	0.38	1.34	< 1	47.5	1.6	0.48	39.7	206	5.24	34.6	3.32	< 2	87.7	0.125	< 1	0.045	30.3
E832022	< 0.05	1.7	53.8	11	17.0	108	0.32	2.30	< 1	32.9	1.1	0.72	28.0	110	3.36	57.3	4.61	< 2	58.4	0.100	< 1	0.046	18.7
E832023	< 0.05	1.7	72.6	19	27.3	48.0	0.46	3.68	< 1	71.4	0.9	1.09	49.1	134	4.62	81.5	7.02	< 2	95.9	0.145	< 1	0.025	33.5
E832024	< 0.05	1.7	37.3	3	11.2	26.4	0.31	1.47	< 1	53.5	0.6	0.48	17.7	46	5.79	33.5	2.99	< 2	51.9	0.070	< 1	0.038	12.0

	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	Bioleac h-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm
E832025	< 0.05	4.4	42.1	12	18.1	61.6	1.86	2.55	< 1	54.1	0.7	0.75	40.5	296	2.57	60.2	4.66	115	68.5	0.128	< 1	0.025	16.5
E832026	< 0.05	0.5	117	15	13.2	7.4	0.03	2.41	< 1	9.44	2.0	0.99	12.3	227	25.9	77.7	6.50	< 2	52.6	0.264	< 1	0.016	22.7
E832027	< 0.05	1.4	45.2	15	21.1	158	1.81	2.84	< 1	74.0	1.0	0.82	33.2	629	7.75	67.7	5.08	< 2	76.8	0.111	< 1	0.015	10.9
E832028	< 0.05	6.8	50.0	5	33.1	438	0.65	4.05	< 1	69.1	1.4	1.46	67.7	581	3.76	109	9.48	103	83.2	0.222	< 1	0.021	82.2
E832029	< 0.05	1.3	77.1	2	74.5	976	2.23	7.48	< 1	176	1.0	2.45	49.0	404	3.37	180	16.3	140	105	0.153	< 1	0.023	27.9
E832030	< 0.05	27.7	20.0	< 1	9.47	1580	0.09	1.88	< 1	3.36	6.7	0.91	2.34	256	5.76	73.1	5.38	130	139	0.223	< 1	0.035	1.3
E832031	< 0.05	< 0.2	74.6	< 1	62.3	973	3.14	6.24	< 1	163	1.1	2.17	38.4	624	4.49	146	14.7	181	122	0.161	< 1	0.028	27.0
E832032	< 0.05	1.3	81.1	9	74.2	657	0.61	7.75	< 1	161	2.0	2.44	112	159	2.89	205	16.2	21	130	0.132	< 1	0.024	43.2
E832033	< 0.05	1.2	91.8	20	75.5	234	0.46	8.92	< 1	71.0	1.8	2.35	63.3	85	3.09	202	14.2	< 2	72.6	0.140	< 1	0.031	27.1
GXR-1 Meas																				0.005	< 1	0.041	3.7
GXR-1 Cert																				0.036	0.257	0.0650	8.20
GXR-1 Meas																				0.005	< 1	0.049	4.4
GXR-1 Cert																				0.036	0.257	0.0650	8.20
GXR-1 Meas																				0.005	< 1	0.039	3.8
GXR-1 Cert																				0.036	0.257	0.0650	8.20
GXR-1 Meas																				0.005	< 1	0.048	4.2
GXR-1 Cert																				0.036	0.257	0.0650	8.20
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas																				0.126	2	0.153	8.4
GXR-4 Cert																				0.29	1.77	0.120	11.1
GXR-4 Meas																				0.108	2	0.121	6.8
GXR-4 Cert																				0.29	1.77	0.120	11.1
GXR-4 Meas																				0.134	2	0.149	8.4
GXR-4 Cert																				0.29	1.77	0.120	11.1
GXR-6 Meas																					< 1	0.038	23.0
GXR-6 Cert																					0.0160	0.0350	32.0
GXR-6 Meas																					< 1	0.045	24.6
GXR-6 Cert																					0.0160	0.0350	32.0
GXR-6 Meas																					< 1	0.042	23.0
GXR-6 Cert																					0.0160	0.0350	32.0
GXR-6 Meas																					< 1	0.039	23.1
GXR-6 Cert																					0.0160	0.0350	32.0
TILL-1 Meas		113	329		294	519	0.50	36.8		106			86.5	303		914	69.6	698	61.3				
TILL-1 Cert		7800.0	13000		5900.0	291000	700.0	1100.0		5600.0			2200.0	99000		38000	3900.0	98000	502000				
TILL-1 Meas		112	329		294	515	0.53	36.5		104			84.3	295		899	68.6	779	61.4				

	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm
TILL-1 Cert		7800.0	13000		5900.0		700.0	1100.0		5600.0			2200.0	99000		38000	3900.0	98000					
						291000													502000				
TILL-2 Meas		8.1	208		193	681	1.59	31.1		286			264	372	74.7	808	64.1	657	336				
TILL-2 Cert		800.0	12000		7400.0		1900.0	1200.0					5700.0	77000	5000	40000	3700.0		130000	390000			
						144000				18400.0													
TILL-2 Meas		8.4	211		194	674	1.64	31.6		291			282	373	78.7	829	65.6	689	349				
TILL-2 Cert		800.0	12000		7400.0		1900.0	1200.0					5700.0	77000	5000	40000	3700.0		130000	390000			
						144000				18400.0													
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas																					< 1	0.026	10.5
OREAS 45d (Aqua Regia) Cert																					0.045	0.035	11.9
OREAS 45d (Aqua Regia) Meas																					< 1	0.039	15.4
OREAS 45d (Aqua Regia) Cert																					0.045	0.035	11.9
SdAR-M2 (U.S.G.S.) Meas																							9.2
SdAR-M2 (U.S.G.S.) Cert																							18
SdAR-M2 (U.S.G.S.) Meas																							9.9
SdAR-M2 (U.S.G.S.) Cert																							18
SdAR-M2 (U.S.G.S.) Meas																							11.4
SdAR-M2 (U.S.G.S.) Cert																							17.9

Results

Activation Laboratories Ltd.

Report: A17-07442

	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	Biolec h-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Ru	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Ti	S	P	Li
DESCRIPTION	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	%	%	%	ppm
SdAR-M2 (U.S.G.S.) Meas																							11.6
SdAR-M2 (U.S.G.S.) Cert																							17.9
E832003 Orig	< 0.05	1.5	38.6	7	24.0	80.3	0.24	2.55	< 1	31.9	0.9	0.65	27.9	69	4.18	57.2	3.99	< 2	25.3				
E832003 Dup	< 0.05	0.5	37.0	7	22.3	74.1	0.23	2.42	< 1	30.3	0.9	0.62	26.7	69	3.99	53.5	3.73	23	24.8				
E832007 Orig																				0.101	< 1	0.021	7.8
E832007 Dup																				0.094	< 1	0.021	7.4
E832009 Orig																				0.185	< 1	0.027	56.8
E832009 Dup																				0.169	< 1	0.025	56.5
E832012 Orig	< 0.05	0.6	142	17	176	898	2.24	18.1	< 1	463	1.2	4.37	82.6	1330	3.32	393	27.3	267	301				
E832012 Dup	< 0.05	0.7	139	15	169	879	2.24	17.4	< 1	441	1.1	4.25	78.5	1290	3.06	386	26.9	319	300				
E832021 Orig	< 0.05	2.6	42.4	27	9.31	153	0.38	1.34	< 1	47.5	1.6	0.48	39.7	206	5.24	34.6	3.32	< 2	87.7				
E832021 Dup	< 0.05	1.7	43.0	26	9.14	153	0.38	1.30	< 1	45.5	1.6	0.50	37.6	203	4.71	35.7	3.17	91	89.5				
Method Blank																				< 0.001	< 1	0.001	< 0.1
Method Blank																				< 0.001	< 1	0.001	< 0.1
Method Blank																				< 0.001	< 1	0.001	0.1
Method Blank																				< 0.001	< 1	0.001	< 0.1
Method Blank																							
Method Blank	< 0.05	< 0.2	< 0.5	< 1	< 0.03	0.5	< 0.01	< 0.01	< 1	0.04	< 0.2	< 0.01	0.02	< 1	< 0.01	< 0.02	< 0.02	< 2	< 0.5				
Method Blank	< 0.05	< 0.2	< 0.5	< 1	< 0.03	0.5	< 0.01	< 0.01	2	0.18	< 0.2	0.01	0.03	2	< 0.01	< 0.02	0.03	< 2	< 0.5				

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y
DESCRIPTION	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832001	0.1	4	0.028	0.45	0.89	0.15	0.23	1.15	1.6	50	29	301	2.74	7.1	13.2	13.8	49.1	5.38	< 0.1	6.1	31.5	18.2	6.56
E832002	0.2	5	0.031	0.61	1.34	0.19	0.29	1.00	3.0	59	42	593	3.35	11.2	27.3	28.6	98.6	7.30	< 0.1	9.3	43.2	19.1	8.84
E832003	0.3	5	0.024	0.19	1.74	0.06	0.12	0.15	1.5	36	26	90	1.81	4.7	12.8	9.59	19.3	5.36	< 0.1	0.5	9.3	8.8	3.35
E832004	0.4	4	0.031	0.22	1.95	0.05	0.19	0.20	2.1	30	28	110	1.67	4.7	13.1	17.4	20.3	4.04	< 0.1	0.4	6.3	9.5	3.85
E832005	0.4	4	0.036	0.19	2.11	0.06	0.18	0.15	1.9	28	29	90	1.65	4.5	11.7	13.1	19.1	3.89	< 0.1	1.0	5.9	8.7	3.27
E832006	0.2	6	0.029	0.43	1.69	0.13	0.57	0.56	2.8	60	47	237	3.02	18.1	108	28.9	69.2	9.80	< 0.1	7.6	15.6	15.3	5.36
E832007	0.2	3	0.025	0.17	1.06	0.05	0.11	0.19	1.4	42	31	76	1.34	2.8	11.0	3.05	12.4	6.44	< 0.1	0.5	10.0	9.2	2.63
E832008	0.1	3	0.023	0.12	0.94	0.05	0.09	0.20	1.3	31	23	65	0.99	2.0	7.0	3.03	10.9	5.74	< 0.1	0.1	8.8	10.0	2.14
E832009	0.5	3	0.059	0.63	1.93	0.11	0.53	0.41	4.3	121	113	397	6.13	18.9	281	259	49.5	7.61	< 0.1	82.6	26.2	12.3	8.83
E832010	0.1	4	0.262	0.21	1.02	0.09	1.36	1.00	1.6	44	21	188	1.58	6.9	20.7	36.9	30.0	3.54	< 0.1	7.8	9.2	34.0	9.47
E832011	0.1	5	0.029	0.40	0.90	0.11	0.11	0.49	2.3	45	38	260	2.19	7.5	22.7	8.40	39.7	5.64	< 0.1	0.2	20.3	12.6	4.00
E832012	0.2	5	0.029	0.51	1.16	0.10	0.15	0.41	2.8	46	70	219	2.38	8.7	46.4	12.7	34.7	5.53	< 0.1	0.9	18.1	10.8	4.32
E832013	0.2	5	0.039	0.61	1.41	0.14	0.19	0.56	4.7	56	45	275	2.40	11.7	37.2	21.0	47.6	8.37	< 0.1	0.3	21.7	14.3	6.17
E832014	< 0.1	4	0.026	0.26	0.84	0.06	0.11	0.30	1.3	33	31	135	1.32	5.3	22.3	6.83	19.9	4.66	< 0.1	< 0.1	9.3	10.8	3.20
E832015	0.2	4	0.029	0.91	1.74	0.06	0.18	0.26	3.9	66	57	223	2.87	13.4	49.6	24.1	33.8	8.02	< 0.1	0.2	8.6	8.3	3.53
E832016	0.1	5	0.024	1.17	1.64	0.16	0.57	0.08	3.2	78	85	143	2.09	10.4	62.1	10.1	27.5	9.73	< 0.1	0.3	8.5	5.2	1.44
E832017	0.1	3	0.018	0.19	1.37	0.05	0.21	0.09	1.5	45	30	93	1.76	3.6	10.9	9.13	19.4	8.09	< 0.1	1.7	10.4	6.0	2.07

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y
DESCRIPTION	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832018	0.4	6	0.037	0.41	2.48	0.07	0.20	0.26	3.6	52	55	160	2.60	11.2	37.1	23.6	23.5	6.76	< 0.1	3.1	10.1	9.0	5.18
E832019	0.2	4	0.031	2.82	2.39	0.05	0.04	0.80	2.8	84	1540	237	5.72	49.0	599	149	28.5	6.25	< 0.1	9.8	4.8	16.8	8.11
E832020	< 0.1	2	0.162	0.27	0.87	0.69	< 0.02	0.30	3.5	27	25	347	2.80	9.3	6.9	15.9	54.5	4.85	< 0.1	< 0.1	52.4	17.4	8.78
E832021	0.3	4	0.022	0.63	1.72	0.06	0.24	0.16	1.6	52	58	2310	4.72	17.9	23.2	13.4	40.7	7.53	< 0.1	25.3	18.4	7.5	1.94
E832022	0.3	4	0.036	0.31	1.38	0.07	0.16	0.24	2.1	33	43	153	1.80	9.7	37.4	20.5	17.1	3.60	< 0.1	12.7	10.5	9.7	3.89
E832023	0.3	4	0.031	0.40	2.02	0.08	0.30	0.16	3.0	61	68	158	2.72	8.2	30.4	21.5	23.3	7.52	< 0.1	15.1	16.1	8.4	3.43
E832024	0.3	3	0.032	0.23	1.07	0.03	0.13	0.23	1.7	22	40	92	1.47	5.9	26.7	17.7	9.1	2.21	< 0.1	8.2	3.5	7.9	3.95
E832025	0.2	3	0.024	0.27	1.56	0.05	0.16	0.16	1.9	45	38	105	1.65	4.4	17.8	14.2	15.7	6.51	< 0.1	3.3	6.4	6.3	3.02
E832026	0.2	2	0.032	1.18	2.61	0.13	0.05	0.17	7.9	174	171	315	5.44	35.0	137	147	57.9	8.96	< 0.1	124	17.3	1.0	3.32
E832027	0.1	3	0.027	0.24	0.69	0.05	0.12	0.16	1.2	41	37	109	1.70	4.4	17.6	10.9	11.9	4.62	< 0.1	4.6	8.5	7.3	2.31
E832028	0.5	5	0.029	1.40	3.06	0.08	0.21	0.43	8.2	103	296	729	4.24	34.2	214	95.7	156	11.6	< 0.1	41.4	15.7	10.3	3.30
E832029	0.1	3	0.029	0.42	0.90	0.07	0.12	0.33	2.0	43	29	184	1.89	7.0	20.1	9.44	27.0	5.12	< 0.1	< 0.1	19.4	11.9	3.77
E832030	0.1	3	0.230	0.18	0.87	0.07	0.88	0.86	1.5	37	17	158	1.34	5.8	18.3	32.3	25.0	2.93	< 0.1	7.4	8.1	30.0	8.37
E832031	0.1	4	0.031	0.39	0.89	0.08	0.13	0.31	1.9	52	39	206	2.34	7.7	22.7	9.51	25.0	5.56	< 0.1	0.9	18.7	12.0	4.41
E832032	0.2	5	0.028	0.36	1.09	0.09	0.13	0.40	1.8	44	36	184	2.21	8.1	39.9	14.9	29.8	4.75	< 0.1	0.9	17.1	11.6	4.63
E832033	0.4	4	0.025	0.33	2.13	0.07	0.16	0.16	2.9	49	46	140	2.71	10.1	41.8	20.8	25.3	6.19	< 0.1	1.1	13.7	10.0	4.28
GXR-1 Meas	0.6	11	0.043	0.12	0.27	0.03	1410	0.77	0.6	74	11	871	22.4	7.9	42.3	1090	742	3.92		398	2.0	171	26.6
GXR-1 Cert	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0
GXR-1 Meas	0.6	13	0.050	0.12	0.33	0.03	1490	0.82	0.9	79	9	945	23.5	8.2	44.8	1110	796	4.28		420	2.2	192	28.8
GXR-1 Cert	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0
GXR-1 Meas	0.6	12	0.044	0.11	0.28	0.03	1330	0.72	0.5	68	8	740	20.1	7.2	37.9	975	649	3.32		365	1.9	151	23.8
GXR-1 Cert	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0
GXR-1 Meas	0.7	14	0.051	0.13	0.33	0.03	1480	0.82	0.6	75	8	886	22.5	7.8	40.0	1070	709	3.18		405	2.1	179	28.3
GXR-1 Cert	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	14.0	275	32.0
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
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DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	1.4	5	0.163	1.61	2.78	1.79	19.3	0.86	7.8	89	62	148	3.05	15.0	45.5	6390	70.2	11.3		104	88.3	66.3	12.3
GXR-4 Cert	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0	20.0		98.0	160	221	14.0
GXR-4 Meas	1.2	4	0.129	1.27	2.25	1.40	16.6	0.71	6.2	70	50	120	2.51	12.9	38.4	5380	60.0	9.90		87.9	77.0	56.7	10.3
GXR-4 Cert	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0	20.0		98.0	160	221	14.0
GXR-4 Meas	1.4	5	0.155	1.55	2.76	1.77	19.2	0.86	7.8	86	62	154	2.95	14.8	43.6	6240	68.1	11.8		104	92.7	68.3	12.6
GXR-4 Cert	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0	20.0		98.0	160	221	14.0
GXR-6 Meas	0.9	6	0.094	0.36	7.25	1.14	0.16	0.14	28.9	183	88	1140	5.63	14.8	28.0	71.5	127	11.3		250	64.3	30.4	7.12
GXR-6 Cert	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0
GXR-6 Meas	0.8	9	0.091	0.40	7.69	1.27	0.17	0.14	29.2	182	85	1170	5.58	14.8	28.9	68.7	131	13.7		251	65.9	30.8	7.15
GXR-6 Cert	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0
GXR-6 Meas	0.8	6	0.086	0.39	7.31	1.22	0.16	0.14	28.8	174	83	1060	5.41	14.1	26.6	67.1	122	13.4		242	59.5	28.9	6.41

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y
DESCRIPTION	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Cert	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0
GXR-6 Meas	0.8	6	0.084	0.37	6.82	1.13	0.16	0.14	27.2	168	78	1080	5.56	14.5	26.8	69.1	116	13.4		237	59.1	28.1	6.54
GXR-6 Cert	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	90.0	35.0	14.0
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							
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DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas			0.034	0.12	4.14	0.08	0.19	0.07	38.5	151	373	330	10.1	21.4	173	268	26.3	13.8		3.1	18.2	9.6	3.69
OREAS 45d (Aqua Regia) Cert			0.031	0.144	4.860	0.097	0.30	0.09	41.50	201.0	467	400.000	13.650	26.2	176.0	345.0	30.6	17.9		6.50	20.9	11.0	5.08
OREAS 45d (Aqua Regia) Meas			0.046	0.17	5.64	0.13	0.27	0.09	50.1	214	511	452	13.9	30.1	240	346	34.9	18.2		3.4	24.0	11.7	5.03
OREAS 45d (Aqua Regia) Cert			0.031	0.144	4.860	0.097	0.30	0.09	41.50	201.0	467	400.000	13.650	26.2	176.0	345.0	30.6	17.9		6.50	20.9	11.0	5.08
SdAR-M2 (U.S.G.S.) Meas	3.7						0.86	1.5	16	9				11.5	44.7	216	681	2.87			15.7	16.5	15.3
SdAR-M2 (U.S.G.S.) Cert	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760	17.6			149	144	32.7
SdAR-M2 (U.S.G.S.) Meas	3.4						0.84	1.5	15	8				11.3	45.3	194	664	2.83			15.5	15.8	14.5
SdAR-M2 (U.S.G.S.) Cert	6.6						1.05	4.1	25.2	49.6				12.4	48.8	236.0000	760	17.6			149	144	32.7

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y
DESCRIPTION	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Meas	4.0						1.02		2.1	18	10			13.0	51.3	242	766	3.39			18.0	18.7	16.7
SdAR-M2 (U.S.G.S.) Cert	6.6						1.05		4.1	25.2	49.6			12.4	48.8	236.00 00	760	17.6			149	144	32.7
SdAR-M2 (U.S.G.S.) Meas	4.4						1.07		2.2	19	11			14.0	54.8	248	797	3.78			19.4	20.2	18.1
SdAR-M2 (U.S.G.S.) Cert	6.6						1.05		4.1	25.2	49.6			12.4	48.8	236.00 00	760	17.6			149	144	32.7
E832003 Orig																							
E832003 Dup																							
E832007 Orig	0.2	3	0.025	0.17	1.06	0.05	0.11	0.19	1.4	42	31	76	1.34	2.8	11.0	3.05	12.4	6.44	< 0.1	0.5	10.0	9.2	2.63
E832007 Dup	0.2	3	0.023	0.15	1.04	0.05	0.10	0.19	0.9	39	27	71	1.27	2.6	10.1	2.76	11.2	6.03	< 0.1	0.4	9.3	8.7	2.27
E832009 Orig	0.5	3	0.059	0.63	1.93	0.11	0.53	0.41	4.3	121	113	397	6.13	18.9	281	259	49.5	7.61	< 0.1	82.6	26.2	12.3	8.83
E832009 Dup	0.5	3	0.052	0.60	1.78	0.11	0.52	0.42	4.2	108	99	368	5.35	17.6	264	244	47.4	7.00	< 0.1	79.0	25.7	12.0	7.98
E832012 Orig																							
E832012 Dup																							
E832021 Orig																							
E832021 Dup																							
Method Blank	< 0.1	1	0.013	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.06	< 0.1	0.16	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01
Method Blank	< 0.1	1	0.012	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	< 1	< 1	< 0.01	< 0.1	< 0.1	1.21	< 0.1	0.13	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01
Method Blank	< 0.1	1	0.012	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.07	< 0.1	0.14	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01
Method Blank	< 0.1	1	0.010	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	1	1	< 1	< 0.01	< 0.1	< 0.1	0.52	< 0.1	0.14	< 0.1	< 0.1	< 0.1	< 0.5	< 0.01
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832001	2.8	3.6	0.34	0.072	< 0.02	0.87	< 0.02	< 0.02	2.31	49.5	20.1	42.9	0.07	3.6	14.0	2.0	< 0.1	0.4	1.8	0.2	1.1	0.2	0.6
E832002	3.1	4.1	0.52	0.152	< 0.02	1.03	< 0.02	< 0.02	3.19	66.5	26.8	56.6	0.35	5.2	19.9	2.8	0.1	0.5	2.5	0.3	1.6	0.3	0.8
E832003	4.7	2.8	0.26	0.038	< 0.02	0.64	< 0.02	< 0.02	1.15	33.5	7.9	17.4	0.01	1.7	7.07	1.1	< 0.1	0.3	1.0	0.1	0.7	0.1	0.3
E832004	7.2	2.7	0.21	0.053	< 0.02	0.69	< 0.02	< 0.02	0.96	37.0	10.9	22.1	0.04	2.0	7.89	1.2	< 0.1	0.3	1.0	0.2	0.8	0.2	0.4
E832005	8.0	2.3	0.29	0.108	< 0.02	0.70	< 0.02	< 0.02	0.90	29.4	8.8	18.9	0.04	1.6	6.68	1.1	< 0.1	0.3	1.0	0.1	0.7	0.1	0.3
E832006	4.3	5.6	0.38	0.195	< 0.02	1.49	0.03	0.03	4.52	62.2	16.6	41.5	0.05	3.6	14.2	2.1	< 0.1	0.4	1.7	0.2	1.1	0.2	0.6
E832007	3.2	3.1	0.26	0.089	< 0.02	0.62	< 0.02	< 0.02	0.93	22.9	9.0	17.4	0.03	1.9	7.44	1.2	< 0.1	0.2	0.9	0.1	0.5	0.1	0.3
E832008	2.8	2.5	0.31	0.037	< 0.02	0.70	< 0.02	< 0.02	0.97	22.6	5.5	11.1	< 0.01	1.2	4.70	0.8	< 0.1	0.2	0.7	< 0.1	0.4	< 0.1	0.2
E832009	12.6	1.9	0.49	0.033	< 0.02	0.76	0.28	0.04	4.19	86.0	36.9	73.7	0.42	7.8	30.1	4.2	0.7	0.7	3.1	0.3	1.7	0.3	0.8
E832010	23.0	0.1	5.03	1.28	< 0.02	0.83	2.35	< 0.02	0.58	42.0	3.5	8.88	0.04	1.1	5.72	1.5	< 0.1	0.3	2.0	0.3	1.7	0.4	0.9
E832011	3.7	3.0	0.52	0.049	< 0.02	0.89	< 0.02	< 0.02	2.18	53.1	14.9	29.9	0.05	2.8	11.0	1.6	< 0.1	0.3	1.3	0.2	0.8	0.2	0.4
E832012	2.9	2.3	0.32	0.039	< 0.02	0.77	< 0.02	< 0.02	1.59	54.5	13.3	28.4	0.01	2.6	10.4	1.6	< 0.1	0.3	1.4	0.2	0.8	0.2	0.4
E832013	2.7	3.2	0.61	0.056	0.02	1.31	< 0.02	0.02	2.43	69.4	13.0	28.9	0.05	2.9	12.8	2.2	< 0.1	0.4	2.0	0.2	1.2	0.2	0.6
E832014	3.1	2.2	0.22	0.031	< 0.02	0.75	< 0.02	< 0.02	1.52	37.7	10.5	21.2	< 0.01	2.1	8.46	1.3	< 0.1	0.2	1.0	0.1	0.6	0.1	0.3



	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832015	7.8	2.9	0.47	0.031	< 0.02	1.04	< 0.02	< 0.02	3.07	34.6	11.0	22.1	< 0.01	2.2	8.47	1.3	< 0.1	0.3	1.2	0.1	0.7	0.1	0.3
E832016	12.4	2.0	0.43	0.009	< 0.02	0.72	< 0.02	< 0.02	4.88	39.1	4.3	8.00	< 0.01	0.8	3.14	0.5	< 0.1	0.1	0.5	< 0.1	0.3	< 0.1	0.1
E832017	4.5	2.4	0.54	0.041	< 0.02	0.94	0.04	< 0.02	1.51	32.1	7.6	15.7	0.02	1.5	5.95	1.1	< 0.1	0.2	0.9	< 0.1	0.4	< 0.1	0.2
E832018	7.6	3.5	0.35	0.043	< 0.02	3.20	< 0.02	< 0.02	1.55	43.8	15.4	30.6	< 0.01	2.9	11.4	1.9	< 0.1	0.4	1.5	0.2	1.0	0.2	0.5
E832019	1.0	0.5	0.10	0.131	< 0.02	0.25	0.79	< 0.02	6.98	62.8	20.2	25.9	0.09	4.0	15.9	2.2	0.5	0.4	1.9	0.2	1.2	0.3	0.7
E832020	35.9	0.9	1.49	< 0.002	< 0.02	1.92	0.02	< 0.02	1.04	129	69.3	147	0.02	14.2	56.5	7.8	< 0.1	0.4	5.1	0.5	2.1	0.3	0.7
E832021	4.8	2.0	0.69	0.049	< 0.02	0.84	0.23	< 0.02	3.34	44.3	8.5	18.3	0.03	1.6	6.08	0.9	0.1	0.1	0.7	< 0.1	0.4	< 0.1	0.2
E832022	7.5	2.0	0.26	0.024	< 0.02	0.65	0.03	< 0.02	1.52	48.8	8.8	18.5	< 0.01	1.9	7.57	1.2	< 0.1	0.3	1.1	0.1	0.7	0.1	0.4
E832023	9.1	2.7	0.41	0.033	< 0.02	1.00	0.07	< 0.02	2.42	39.7	10.3	20.8	0.02	2.0	8.04	1.4	< 0.1	0.2	1.1	0.1	0.7	0.1	0.3
E832024	8.1	1.8	0.17	0.009	< 0.02	0.47	0.02	< 0.02	0.79	19.8	9.3	18.1	< 0.01	1.9	7.55	1.2	< 0.1	0.2	1.0	0.1	0.7	0.1	0.4
E832025	6.8	2.7	0.31	0.030	< 0.02	0.85	0.02	< 0.02	1.07	26.0	9.3	17.6	< 0.01	1.8	6.88	1.0	< 0.1	0.2	0.8	0.1	0.6	0.1	0.3
E832026	9.1	0.2	0.37	0.016	< 0.02	0.44	0.22	0.16	2.42	47.7	3.4	6.45	0.02	0.6	2.85	0.5	0.2	0.1	0.6	< 0.1	0.5	0.1	0.3
E832027	5.7	2.4	0.28	0.037	< 0.02	0.60	< 0.02	< 0.02	1.07	25.4	6.1	13.0	0.03	1.2	4.91	0.7	< 0.1	0.2	0.6	< 0.1	0.4	< 0.1	0.2
E832028	4.8	1.8	0.60	0.063	0.03	0.90	0.22	< 0.02	3.55	66.7	10.0	22.0	0.21	2.0	7.85	1.3	< 0.1	0.2	0.9	0.1	0.6	0.1	0.3
E832029	4.6	2.5	0.32	0.032	< 0.02	0.72	< 0.02	< 0.02	1.94	34.6	11.2	23.8	< 0.01	2.3	9.28	1.4	< 0.1	0.3	1.0	0.1	0.7	0.1	0.3
E832030	21.1	0.1	4.42	1.20	< 0.02	0.67	2.06	< 0.02	0.51	33.6	3.1	7.67	< 0.01	1.0	5.07	1.4	< 0.1	0.3	1.5	0.3	1.4	0.3	0.8
E832031	5.1	2.1	0.59	0.027	< 0.02	0.84	< 0.02	< 0.02	1.95	33.9	14.8	31.5	0.01	3.1	12.5	2.0	< 0.1	0.3	1.5	0.2	0.8	0.2	0.4
E832032	2.2	2.6	0.21	0.057	< 0.02	0.76	< 0.02	< 0.02	2.41	65.4	14.5	38.8	0.07	3.0	11.9	1.7	< 0.1	0.4	1.4	0.2	0.8	0.2	0.4
E832033	3.7	3.2	0.46	0.041	0.02	0.85	< 0.02	< 0.02	2.58	47.5	15.1	31.0	0.03	3.0	11.7	1.7	< 0.1	0.3	1.4	0.2	0.9	0.2	0.4
GXR-1 Meas	9.8	0.1	15.6	28.3	0.72	23.4	81.4	13.0	2.67	174	4.9	10.1	2.61		6.26	2.0	14.7	0.5	3.1	0.6	3.7		
GXR-1 Cert	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30		
GXR-1 Meas	9.4	0.1	17.4	30.2	0.76	25.7	88.9	14.4	2.97	210	5.2	11.1	2.68		6.75	2.2	16.0	0.5	3.3	0.6	4.0		
GXR-1 Cert	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30		
GXR-1 Meas	8.1	0.1	14.7	26.4	0.68	21.8	75.8	12.0	2.55	177	4.6	9.76	2.53		5.90	2.0	13.2	0.4	2.8	0.6	3.5		
GXR-1 Cert	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30		
GXR-1 Meas	9.4	0.1	17.2	30.9	0.79	25.4	89.0	14.0	3.00	220	5.3	11.0	2.63		6.67	2.4	14.6	0.5	3.2	0.7	4.0		
GXR-1 Cert	38.0	0.800	18.0	31.0	0.770	54.0	122	13.0	3.00	750	7.50	17.0	3.30		18.0	2.70	16.6	0.690	4.20	0.830	4.30		
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	9.4	0.2	288	3.46	0.21	6.22	3.70	0.94	2.51	36.0	49.1	98.7	0.34		39.1	5.9	5.3	1.3	4.4	0.5	2.4		
GXR-4 Cert	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60	1.63	5.25	0.360	2.60		
GXR-4 Meas	7.7	0.2	251	2.95	0.17	5.10	3.14	0.76	2.10	33.2	40.9	83.4	0.22		33.8	4.8	4.4	1.1	3.4	0.4	2.0		
GXR-4 Cert	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60	1.63	5.25	0.360	2.60		
GXR-4 Meas	8.3	0.2	301	3.59	0.23	6.32	3.79	0.97	2.62	41.7	49.5	98.9	0.28		40.3	5.7	5.4	1.3	4.4	0.5	2.3		
GXR-4 Cert	186	10.0	310	4.00	0.270	5.60	4.80	0.970	2.80	1640	64.5	102	0.860		45.0	6.60	5.60	1.63	5.25	0.360	2.60		
GXR-6 Meas	13.8	< 0.1	1.69	0.278	0.07	1.31	2.17	0.06	3.82	1010	11.1	33.5	0.08		12.2	2.4	< 0.1	0.6	1.9	0.3	1.4		
GXR-6 Cert	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80		

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	
SAMPLE	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	13.4	< 0.1	1.76	0.279	0.06	1.26	2.20	0.04	4.07	1010	11.0	33.7	0.09		12.4	2.4	0.1	0.6	2.0	0.3	1.4		
GXR-6 Cert	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80		
GXR-6 Meas	13.4	< 0.1	1.59	0.256	0.06	1.03	1.91	0.03	3.49	958	10.2	31.9	0.07		11.4	2.2	0.3	0.6	1.7	0.2	1.3		
GXR-6 Cert	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80		
GXR-6 Meas	14.0	< 0.1	1.64	0.255	0.06	1.18	1.98	0.03	3.51	952	10.6	31.6	0.08		11.5	2.2	0.2	0.6	1.9	0.2	1.4		
GXR-6 Cert	110	7.50	2.40	1.30	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0	1.00		13.0	2.67	0.940	0.760	2.97	0.415	2.80		
TILL-1 Meas																							
TILL-1 Cert																							
TILL-1 Meas																							
TILL-1 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
TILL-2 Meas																							
TILL-2 Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
BL-4a Meas																							
BL-4a Cert																							
DL-1a Meas																							
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DL-1a Meas																							
DL-1a Cert																							
DL-1a Meas																							
DL-1a Cert																							
OREAS 45d (Aqua Regia) Meas					0.06	1.50				70.3	8.6	20.6											
OREAS 45d (Aqua Regia) Cert					0.085	1.950				80	9.960	24.8											
OREAS 45d (Aqua Regia) Meas					0.08	2.23				95.1	11.4	28.1											
OREAS 45d (Aqua Regia) Cert					0.085	1.950				80	9.960	24.8											
SdAR-M2 (U.S.G.S.) Meas	6.0	3.1	10.2						0.76	103	34.0	77.2	4.45	7.6	31.9	5.2	0.5	3.9	0.5	2.8	0.6	1.6	
SdAR-M2 (U.S.G.S.) Cert	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	1.44	6.28	0.97	5.88	1.21	3.58	
SdAR-M2	5.6	3.0	9.94						0.74	100	32.0	74.2	4.19	7.2	30.5	4.9	0.5	3.8	0.5	2.7	0.6	1.5	

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Zr	Nb	Mo	Ag	In	Sn	Sb	Te	Cs	Ba	La	Ce	Cd	Pr	Nd	Sm	Se	Eu	Gd	Tb	Dy	Ho	Er
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	1.44	6.28	0.97	5.88	1.21	3.58	
SdAR-M2 (U.S.G.S.) Meas	6.7	3.7	11.7						0.88	121	39.8	91.0	4.90	8.7	36.8	6.0	0.6	4.5	0.6	3.2	0.7	1.8	
SdAR-M2 (U.S.G.S.) Cert	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	1.44	6.28	0.97	5.88	1.21	3.58	
SdAR-M2 (U.S.G.S.) Meas	6.6	4.3	12.6						0.95	129	41.4	92.9	5.27	9.1	37.6	6.3	0.6	4.7	0.6	3.3	0.7	1.8	
SdAR-M2 (U.S.G.S.) Cert	259	26.2	13.3						1.82	990	46.6	98.8	5.1	11.0	39.4	7.18	1.44	6.28	0.97	5.88	1.21	3.58	
E832003 Orig																							
E832003 Dup																							
E832007 Orig	3.2	3.1	0.26	0.089	< 0.02	0.62	< 0.02	< 0.02	0.93	22.9	9.0	17.4	0.03	1.9	7.44	1.2	< 0.1	0.2	0.9	0.1	0.5	0.1	0.3
E832007 Dup	3.2	2.8	0.24	0.038	< 0.02	0.63	< 0.02	< 0.02	0.85	22.8	9.3	18.4	0.02	1.8	6.78	1.0	< 0.1	0.2	0.8	< 0.1	0.5	< 0.1	0.2
E832009 Orig	12.6	1.9	0.49	0.033	< 0.02	0.76	0.28	0.04	4.19	86.0	36.9	73.7	0.42	7.8	30.1	4.2	0.7	0.7	3.1	0.3	1.7	0.3	0.8
E832009 Dup	12.7	1.6	0.45	0.036	< 0.02	0.70	0.26	0.04	4.11	83.8	36.4	75.9	0.38	8.0	32.6	3.8	0.6	0.7	2.9	0.3	1.5	0.3	0.7
E832012 Orig																							
E832012 Dup																							
E832021 Orig																							
E832021 Dup																							
Method Blank	0.1	< 0.1	< 0.01	< 0.002	< 0.02	0.10	< 0.02	< 0.02	< 0.02	6.9	< 0.5	0.08	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.2	< 0.1	0.06	0.002	< 0.02	0.08	< 0.02	< 0.02	< 0.02	7.9	< 0.5	0.03	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.1	< 0.1	< 0.01	< 0.002	< 0.02	0.07	< 0.02	< 0.02	< 0.02	5.8	< 0.5	0.02	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.1	< 0.1	0.02	< 0.002	< 0.02	0.08	< 0.02	< 0.02	< 0.02	5.7	< 0.5	0.02	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
E832001	< 0.1	0.5	< 0.1	< 0.1	< 0.05	5.3	< 0.001	< 0.5	0.14	10.4	5.9	2.0	90
E832002	0.1	0.6	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.22	14.1	7.8	2.9	80
E832003	< 0.1	0.3	< 0.1	0.1	< 0.05	0.7	< 0.001	< 0.5	0.03	8.11	5.0	0.8	40
E832004	< 0.1	0.3	< 0.1	0.2	< 0.05	0.3	< 0.001	< 0.5	0.02	8.99	7.1	0.8	70
E832005	< 0.1	0.3	< 0.1	0.2	< 0.05	0.4	< 0.001	< 0.5	< 0.02	8.19	6.5	0.8	40
E832006	< 0.1	0.5	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.29	17.8	7.9	1.7	150
E832007	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.2	< 0.001	415	0.04	5.09	3.7	0.5	90
E832008	< 0.1	0.2	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.02	5.78	2.0	0.3	50
E832009	0.1	0.8	0.1	0.3	< 0.05	0.5	< 0.001	9.1	0.23	12.9	19.5	1.9	40
E832010	0.1	0.7	< 0.1	0.5	< 0.05	0.2	< 0.001	3120	0.04	6.48	0.5	0.1	30
E832011	< 0.1	0.3	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.08	5.48	4.8	1.0	40
E832012	< 0.1	0.3	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.07	5.87	4.3	0.6	20

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
E832013	< 0.1	0.5	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.18	7.83	5.0	0.7	120
E832014	< 0.1	0.3	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.07	6.19	4.3	0.5	70
E832015	< 0.1	0.3	< 0.1	0.1	< 0.05	0.1	< 0.001	< 0.5	0.07	7.61	4.3	0.7	70
E832016	< 0.1	0.1	< 0.1	0.3	< 0.05	0.1	< 0.001	< 0.5	0.05	6.48	2.7	0.5	40
E832017	< 0.1	0.2	< 0.1	0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.06	5.76	4.4	0.4	70
E832018	< 0.1	0.4	< 0.1	0.2	< 0.05	0.3	< 0.001	< 0.5	0.08	8.68	5.7	0.9	50
E832019	< 0.1	0.6	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.14	3.30	2.2	1.4	40
E832020	< 0.1	0.5	< 0.1	0.8	< 0.05	13.1	< 0.001	< 0.5	0.36	13.3	46.7	2.0	20
E832021	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.5	< 0.001	< 0.5	0.08	9.53	5.2	0.5	30
E832022	< 0.1	0.3	< 0.1	0.2	< 0.05	0.4	< 0.001	< 0.5	0.12	5.88	4.5	0.5	140
E832023	< 0.1	0.3	< 0.1	0.2	< 0.05	0.4	< 0.001	< 0.5	0.12	8.21	7.0	0.8	90
E832024	< 0.1	0.3	< 0.1	0.2	< 0.05	0.9	< 0.001	< 0.5	< 0.02	3.76	6.1	0.6	60
E832025	< 0.1	0.2	< 0.1	0.2	< 0.05	0.7	< 0.001	< 0.5	0.05	7.14	4.2	0.8	50
E832026	< 0.1	0.3	< 0.1	0.2	< 0.05	7.8	< 0.001	1.1	0.25	3.38	0.8	0.1	20
E832027	< 0.1	0.2	< 0.1	0.2	< 0.05	3.2	< 0.001	< 0.5	< 0.02	4.34	2.5	0.4	20
E832028	< 0.1	0.3	< 0.1	0.1	< 0.05	0.3	< 0.001	< 0.5	0.11	13.3	4.7	0.6	20
E832029	< 0.1	0.3	< 0.1	< 0.1	< 0.05	0.3	< 0.001	< 0.5	0.06	5.39	4.3	0.5	20
E832030	0.1	0.6	< 0.1	0.5	< 0.05	0.2	< 0.001	2770	< 0.02	5.75	0.5	0.1	< 10
E832031	< 0.1	0.3	< 0.1	0.1	< 0.05	0.6	< 0.001	< 0.5	0.15	6.09	8.1	0.7	120
E832032	< 0.1	0.4	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.14	6.64	4.3	1.0	100
E832033	< 0.1	0.3	< 0.1	< 0.1	< 0.05	0.3	< 0.001	< 0.5	0.11	8.01	6.9	0.9	80
GXR-1 Meas	0.3	1.9	0.2	0.2	< 0.05	149		3080	0.33	738	1.5	30.9	3390
GXR-1 Cert	0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
GXR-1 Meas	0.3	2.0	0.3	0.2	< 0.05	157		3510	0.36	787	1.6	33.1	3700
GXR-1 Cert	0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
GXR-1 Meas	0.3	1.6	0.2	0.2	< 0.05	127		2900	0.32	679	1.4	29.5	3310
GXR-1 Cert	0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
GXR-1 Meas	0.3	1.9	0.3	0.2	< 0.05	149		3370	0.39	762	1.6	32.8	3900
GXR-1 Cert	0.430	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
DH-1a Meas											> 200	2420	
DH-1a Cert											910	2629	
DH-1a Meas											> 200	2270	
DH-1a Cert											910	2629	
DH-1a Meas											> 200	2360	
DH-1a Cert											910	2629	
DH-1a Meas											> 200	2490	
DH-1a Cert											910	2629	
GXR-4 Meas	0.1	0.8	0.1	0.3	< 0.05	10.8		408	3.06	49.5	18.1	5.0	160
GXR-4 Cert	0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110
GXR-4 Meas	0.1	0.6	0.1	0.2	< 0.05	8.7		345	2.54	41.9	14.7	4.2	160
GXR-4 Cert	0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110
GXR-4 Meas	0.1	0.8	0.1	0.3	< 0.05	10.6		524	3.17	48.8	17.8	4.9	170
GXR-4 Cert	0.210	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	110

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
GXR-6 Meas		0.7	0.1	0.4	< 0.05	< 0.1		67.5	2.07	107	4.0	0.8	180
GXR-6 Cert		2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas		0.7	0.1	0.4	< 0.05	< 0.1		66.4	2.05	107	4.1	0.8	120
GXR-6 Cert		2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas		0.7	0.1	0.4	< 0.05	< 0.1		66.2	1.92	99.5	3.8	0.8	180
GXR-6 Cert		2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
GXR-6 Meas		0.7	0.1	0.4	< 0.05	< 0.1		98.5	1.94	103	3.9	0.8	90
GXR-6 Cert		2.40	0.330	4.30	0.485	1.90		95.0	2.20	101	5.30	1.54	68.0
TILL-1 Meas													
TILL-1 Cert													
TILL-1 Meas													
TILL-1 Cert													
TILL-2 Meas													
TILL-2 Cert													
TILL-2 Meas													
TILL-2 Cert													
BL-4a Meas												1210	
BL-4a Cert												1250	
BL-4a Meas												998	
BL-4a Cert												1250	
BL-4a Meas												1210	
BL-4a Cert												1250	
BL-4a Meas												1180	
BL-4a Cert												1250	
DL-1a Meas											73.0	109	
DL-1a Cert											76.0	116	
DL-1a Meas											73.1	104	
DL-1a Cert											76.0	116	
DL-1a Meas											74.2	111	
DL-1a Cert											76.0	116	
DL-1a Meas											73.1	113	
DL-1a Cert											76.0	116	
OREAS 45d (Aqua Regia) Meas								25.4		14.1	8.1	1.2	
OREAS 45d (Aqua Regia) Cert								21		17.00	11.3	1.64	
OREAS 45d (Aqua Regia) Meas								16.6		19.1	10.8	1.7	
OREAS 45d (Aqua Regia) Cert								21		17.00	11.3	1.64	
SdAR-M2 (U.S.G.S.) Meas	0.2	1.3	0.2	0.2	< 0.05	0.9				688	10.2	1.4	1020
SdAR-M2	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	

	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
SAMPLE	Tm	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
(U.S.G.S.) Cert													1440.00
SdAR-M2 (U.S.G.S.) Meas	0.2	1.3	0.2	0.2	< 0.05	0.9				652	9.7	1.3	930
SdAR-M2 (U.S.G.S.) Cert	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
SdAR-M2 (U.S.G.S.) Meas	0.2	1.5	0.2	0.2	< 0.05	0.9				781	11.5	1.6	1140
SdAR-M2 (U.S.G.S.) Cert	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
SdAR-M2 (U.S.G.S.) Meas	0.3	1.5	0.2	0.2	< 0.05	1.0				813	12.3	1.6	1270
SdAR-M2 (U.S.G.S.) Cert	0.54	3.63	0.54	7.29	1.8	2.8				808	14.2	2.53	1440.00
E832003 Orig													
E832003 Dup													
E832007 Orig	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.2	< 0.001	415	0.04	5.09	3.7	0.5	90
E832007 Dup	< 0.1	0.2	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	4.62	3.1	0.4	70
E832009 Orig	0.1	0.8	0.1	0.3	< 0.05	0.5	< 0.001	9.1	0.23	12.9	19.5	1.9	40
E832009 Dup	0.1	0.7	0.1	0.2	< 0.05	0.5	< 0.001	9.4	0.22	11.8	13.8	1.7	40
E832012 Orig													
E832012 Dup													
E832021 Orig													
E832021 Dup													
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	70
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	0.15	< 0.1	< 0.1	90
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	30
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.01	< 0.1	< 0.1	50
Method Blank													
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 25-Aug-17  
**Invoice No.:** A17-09167  
**Invoice Date:** 18-Sep-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

89 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-09167**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized and written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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**Date Submitted:** 25-Aug-17  
**Invoice No.:** A17-09167  
**Invoice Date:** 18-Sep-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

89 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-09167**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-09167

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832034	0.009	1	78.3	2.05	0.83	9.16	1.23	1.89	0.4	48	66.1	824	4.29	0.9	157	1.8	2.3	0.6	10	0.10	3.13	27.2	1.21
E832035	0.006	1	112	2.08	1.71	9.21	1.00	3.06	0.2	101	251	848	7.22	5.7	787	2.0	1.6	0.6	< 10	< 0.05	8.20	40.0	0.94
E832036	< 0.005	1	21.1	2.83	0.78	7.37	1.95	2.07	< 0.1	51	58.6	370	2.42	1.0	42.9	1.0	1.3	0.3	< 10	< 0.05	1.24	9.8	0.64
E832037	0.005	< 1	20.6	2.62	0.84	6.33	1.68	2.10	< 0.1	55	69.9	435	2.65	3.6	34.3	1.0	1.0	0.3	< 10	< 0.05	1.86	9.2	0.57
E832038	< 0.005	1	35.3	2.63	1.07	6.86	1.70	2.30	< 0.1	42	106	510	3.20	2.4	40.1	1.0	1.1	0.3	< 10	< 0.05	3.74	11.0	0.53
E832039	< 0.005	6	49.7	2.01	1.55	6.84	1.18	1.71	< 0.1	87	169	587	6.14	2.9	55.9	0.9	1.1	0.3	< 10	< 0.05	3.86	15.3	0.40
E832040	< 0.005	15	23.0	> 3.00	0.27	6.55	2.36	1.14	< 0.1	27	26.4	332	2.30	7.7	3.3	0.6	1.1	0.2	< 10	< 0.05	1.45	3.9	0.44
E832041	0.174	30	6.9	2.22	2.19	6.86	0.70	4.09	0.2	139	89.8	1230	7.32	2.7	41.8	2.7	1.3	0.8	< 10	< 0.05	1.01	20.3	0.60
E832042	< 0.005	12	34.1	2.59	0.91	7.95	1.51	2.06	< 0.1	59	71.9	399	2.96	3.5	51.7	0.9	1.3	0.3	< 10	< 0.05	1.90	11.9	0.49
E832043	< 0.005	2	201	2.63	2.19	9.85	0.91	3.27	0.1	59	214	1120	7.36	4.3	171	1.6	1.5	0.5	< 10	< 0.05	6.08	52.0	0.86
E832044	0.009	< 1	41.7	1.78	1.40	6.78	0.87	2.12	< 0.1	104	178	688	8.35	2.5	54.9	1.3	1.4	0.4	30	< 0.05	2.05	16.3	0.51
E832045	0.005	< 1	33.5	2.31	0.95	7.10	1.48	2.26	< 0.1	63	83.9	514	3.32	3.8	62.9	1.7	1.1	0.6	< 10	< 0.05	1.35	12.4	0.98
E832046	0.075	2	62.9	1.34	1.52	6.16	1.19	1.49	< 0.1	112	136	1030	9.45	2.6	68.2	1.0	1.4	0.3	< 10	< 0.05	4.43	18.7	0.43
E832047	< 0.005	< 1	72.8	2.02	1.32	7.70	1.33	1.90	< 0.1	88	113	565	5.52	3.1	88.8	1.2	1.4	0.4	< 10	< 0.05	3.64	20.3	0.55
E832048	0.015	< 1	60.8	1.87	1.55	7.26	1.00	2.24	< 0.1	149	154	786	7.84	4.1	69.5	1.6	1.4	0.5	< 10	< 0.05	1.90	24.0	0.62
E832049	< 0.005	1	27.9	2.40	0.82	7.26	1.83	1.66	< 0.1	58	95.6	367	3.45	4.2	35.3	0.9	1.2	0.3	< 10	< 0.05	1.80	9.6	0.53
E832050	3.06	3	7.1	1.70	1.46	5.73	2.91	3.19	< 0.1	51	79.1	643	3.87	1.2	33.7	1.6	1.2	0.5	< 10	1.26	18.1	17.8	0.67
E832051	0.006	32	49.2	1.90	1.17	5.49	0.96	1.76	0.1	115	172	659	5.92	6.7	67.3	1.2	1.4	0.4	< 10	< 0.05	2.59	20.2	0.51
E832052	< 0.005	26	26.1	2.26	0.91	6.57	1.35	1.79	< 0.1	88	101	382	4.26	3.4	33.9	0.8	1.0	0.2	< 10	< 0.05	1.59	9.6	0.45
E832053	0.043	13	28.2	2.31	0.79	6.94	1.44	1.79	< 0.1	66	86.2	395	3.20	3.8	42.1	0.8	1.2	0.3	< 10	< 0.05	1.37	11.6	0.47
E832054	< 0.005	1	21.4	2.12	0.80	6.10	1.63	1.62	< 0.1	70	70.4	427	2.99	0.6	28.1	1.0	1.4	0.3	< 10	< 0.05	1.53	8.9	0.57
E832055	< 0.005	1	32.1	1.70	1.05	6.57	1.71	1.18	< 0.1	37	66.0	418	3.47	1.3	44.3	1.0	1.2	0.3	< 10	< 0.05	2.74	11.7	0.56
E832056	< 0.005	< 1	34.1	2.04	0.79	6.27	1.76	1.54	< 0.1	31	73.8	385	3.61	2.9	31.0	0.9	1.2	0.3	< 10	< 0.05	2.28	9.9	0.53
E832057	0.007	1	68.6	1.21	1.38	8.24	0.85	1.62	< 0.1	95	180	594	5.69	2.6	107	1.3	1.6	0.4	< 10	< 0.05	4.28	31.6	0.69
E832058	< 0.005	< 1	38.8	1.71	1.50	5.79	1.57	1.92	< 0.1	60	76.9	694	3.61	3.4	41.1	1.1	1.1	0.3	< 10	< 0.05	1.77	16.2	0.82
E832059	< 0.005	< 1	23.3	2.43	0.96	6.23	1.56	2.09	< 0.1	51	95.3	460	2.78	4.2	43.0	1.1	1.0	0.3	< 10	< 0.05	1.49	10.8	0.64
E832060	< 0.005	< 1	23.1	2.35	0.35	6.88	4.42	1.70	< 0.1	51	51.1	568	3.46	4.5	5.0	5.1	1.5	1.9	< 10	< 0.05	0.74	5.6	1.78
E832061	< 0.005	1	14.8	2.49	0.75	6.25	1.69	1.89	< 0.1	42	72.2	351	2.19	3.7	35.2	1.0	1.0	0.3	< 10	< 0.05	0.87	7.8	0.59
E832062	< 0.005	25	142	2.20	1.39	6.69	0.77	3.17	0.3	86	102	1610	6.34	7.9	123	3.1	1.0	1.0	< 10	< 0.05	2.13	37.2	1.48
E832063	< 0.005	20	56.4	1.72	1.26	7.00	1.19	1.76	0.1	106	147	577	6.06	4.0	87.9	1.1	1.4	0.3	20	< 0.05	3.12	24.3	0.56
E832064	< 0.005	11	37.6	2.12	0.86	6.99	1.63	1.61	< 0.1	67	81.5	371	3.21	3.7	46.2	1.0	1.3	0.3	< 10	< 0.05	3.04	12.2	0.53
E832065	0.012	1	59.3	1.43	2.45	5.97	0.98	2.12	< 0.1	106	309	710	6.22	2.4	151	0.9	0.9	0.3	< 10	< 0.05	2.58	32.5	0.45
E832066	< 0.005	1	17.1	2.13	0.43	6.29	1.45	1.53	< 0.1	49	52.5	283	2.34	2.1	25.7	0.8	1.1	0.2	< 10	< 0.05	1.05	7.9	0.48
E832067	0.007	2	38.2	2.29	1.04	6.30	1.41	2.16	< 0.1	49	89.4	808	4.32	1.9	47.5	1.2	2.2	0.4	< 10	< 0.05	4.84	19.4	0.68
E832068	0.010	1	26.1	2.16	0.95	5.82	1.68	1.71	< 0.1	36	67.1	486	2.65	3.0	34.2	1.1	1.1	0.3	< 10	< 0.05	1.51	11.1	0.51
E832069	0.008	< 1	23.0	2.25	0.79	6.31	1.54	1.77	< 0.1	29	75.7	364	2.48	2.8	51.7	0.9	1.2	0.3	< 10	< 0.05	1.43	12.3	0.55
E832070	2.96	1	6.2	1.53	1.28	5.19	2.54	2.82	< 0.1	35	65.4	573	3.55	0.7	29.2	1.5	0.9	0.5	< 10	1.14	16.7	15.7	0.62
E832071	0.051	19	19.8	1.85	0.86	4.99	1.22	2.03	0.1	86	112	4650	6.93	0.4	50.7	1.1	0.9	0.3	< 10	< 0.05	1.67	86.8	0.61
E832072	0.007	2	26.6	2.31	0.88	6.39	1.61	1.95	< 0.1	55	63.0	407	2.63	3.0	36.6	1.1	1.2	0.4	< 10	< 0.05	1.45	9.2	0.73
E832073	0.149	4	42.7	1.94	0.84	7.01	1.88	1.29	< 0.1	55	66.4	351	3.80	0.1	42.8	1.0	1.4	0.3	< 10	< 0.05	2.27	13.3	0.57
E832074	0.018	1	53.6	1.47	1.17	8.06	1.07	1.75	< 0.1	72	119	540	4.60	2.4	88.9	1.3	1.6	0.4	< 10	< 0.05	3.33	27.3	0.71
E832075	0.015	1	22.4	1.10	1.11	7.26	0.34	2.36	< 0.1	189	140	737	8.66	2.2	56.9	1.8	1.0	0.6	< 10	< 0.05	1.20	25.7	0.72
E832076	< 0.005	< 1	52.3	1.88	1.01	7.42	2.08	1.32	< 0.1	43	83.7	411	4.08	2.9	48.4	1.1	1.5	0.3	< 10	< 0.05	2.87	14.0	0.53

## Results

## Activation Laboratories Ltd.

## Report: A17-09167

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832077	0.006	< 1	35.2	2.06	0.97	7.47	2.09	1.52	< 0.1	43	76.6	393	3.35	2.8	44.6	1.0	1.3	0.3	< 10	< 0.05	2.33	12.7	0.56
E832078	< 0.005	1	63.7	1.75	1.34	7.54	1.27	1.83	< 0.1	112	124	639	6.32	2.6	89.7	1.3	1.4	0.4	< 10	< 0.05	4.13	28.2	0.58
E832079	0.013	8	66.3	2.25	1.27	6.73	1.23	2.30	< 0.1	40	86.4	674	4.22	2.9	55.4	1.3	1.2	0.4	< 10	< 0.05	2.30	17.4	0.65
E832080	< 0.005	16	26.8	2.98	0.28	7.79	2.98	1.19	< 0.1	24	13.3	281	1.92	6.2	3.0	1.6	1.2	0.5	< 10	< 0.05	1.76	3.5	0.74
E832081	< 0.005	20	25.7	2.26	0.86	6.26	1.42	1.82	< 0.1	64	74.5	406	2.91	3.8	56.9	1.0	1.1	0.3	< 10	< 0.05	1.41	14.6	0.52
E832082	< 0.005	1	19.2	2.29	0.73	6.26	1.55	1.73	< 0.1	56	73.0	341	2.55	0.3	38.4	0.8	1.2	0.3	< 10	< 0.05	1.29	10.1	0.48
E832083	< 0.005	< 1	13.6	2.45	0.73	6.09	1.62	1.90	< 0.1	44	56.3	316	1.83	3.1	35.3	0.9	1.1	0.3	< 10	< 0.05	0.90	8.5	0.58
E832084	0.005	< 1	27.9	2.21	0.91	6.10	1.43	1.85	< 0.1	46	83.1	420	2.71	3.7	33.5	0.9	1.0	0.3	< 10	< 0.05	1.48	10.3	0.48
E832085	0.021	< 1	17.0	2.53	0.72	6.32	1.72	1.85	< 0.1	41	85.4	356	2.97	3.4	30.8	0.8	1.2	0.2	< 10	< 0.05	1.24	8.0	0.47
E832086	0.005	< 1	35.8	2.10	0.89	6.15	1.48	1.67	< 0.1	85	122	447	4.42	3.0	35.2	0.9	1.1	0.3	< 10	< 0.05	2.44	10.0	0.47
E832087	0.006	< 1	43.9	1.80	1.42	6.12	1.20	1.82	0.1	102	132	614	4.90	3.2	52.7	0.9	0.9	0.3	< 10	< 0.05	4.11	17.7	0.43
E832088	< 0.005	1	32.1	1.91	0.80	6.57	2.15	1.33	< 0.1	30	46.6	400	2.83	3.0	31.0	1.0	1.3	0.3	< 10	< 0.05	2.02	10.2	0.60
E832089	< 0.005	3	35.5	2.05	0.94	6.57	1.43	1.81	< 0.1	58	88.6	412	4.10	3.1	52.2	0.9	1.1	0.3	< 10	< 0.05	1.95	13.9	0.48
E832090	3.13	16	6.3	1.43	1.25	4.95	1.64	2.83	< 0.1	79	85.0	574	3.48	1.4	28.4	1.4	0.8	0.5	< 10	1.11	16.3	15.4	0.60
E832091	0.005	28	24.0	2.29	0.71	6.70	1.68	1.66	< 0.1	58	78.5	349	2.43	3.3	29.6	0.8	1.2	0.3	< 10	< 0.05	1.73	8.7	0.49
E832092	0.018	3	15.9	0.48	0.22	6.95	0.38	2.30	0.7	67	79.9	1590	5.74	0.4	179	7.9	2.1	2.6	70	0.58	1.84	99.9	6.53
E832093	0.071	2	23.2	2.04	0.80	5.93	1.30	2.00	< 0.1	64	95.4	481	3.64	4.1	34.9	1.4	1.1	0.4	< 10	< 0.05	1.40	11.2	0.94
E832094	< 0.005	1	13.4	2.56	0.47	6.29	1.89	1.79	< 0.1	41	47.4	263	1.71	0.4	18.8	0.9	1.2	0.3	< 10	< 0.05	0.76	5.8	0.61
E832095	0.006	2	34.9	2.07	1.42	6.61	1.39	2.21	< 0.1	91	126	589	4.50	3.3	61.2	1.2	1.1	0.4	< 10	< 0.05	2.40	15.7	0.56
E832096	0.006	< 1	49.9	1.99	0.94	6.59	1.28	1.92	0.4	73	131	2450	4.46	5.1	68.5	2.4	2.2	0.8	< 10	< 0.05	3.66	23.3	1.45
E832097	< 0.005	1	32.9	1.95	0.90	6.68	1.29	1.74	< 0.1	74	104	420	3.91	2.7	42.9	0.9	1.1	0.3	< 10	< 0.05	2.68	10.6	0.50
E832098	0.006	< 1	18.1	2.25	1.25	6.11	1.50	2.91	0.1	83	161	789	3.44	3.7	54.8	1.7	1.0	0.5	< 10	< 0.05	1.50	19.5	0.91
E832217	0.019	< 1	5.3	0.11	0.19	2.66	0.18	5.14	1.2	37	62.2	1240	2.04	0.5	172	7.2	0.8	2.3	< 10	0.39	1.87	25.3	4.09
E832218	0.007	9	< 0.5	0.05	0.10	0.18	0.04	2.56	0.1	4	7.1	136	0.09	< 0.1	4.4	< 0.1	< 0.1	< 0.1	< 10	< 0.05	0.15	0.6	< 0.05
E832219	0.007	17	0.9	0.04	0.19	0.75	0.08	4.54	0.3	9	13.2	317	0.42	< 0.1	45.6	0.6	0.1	0.2	70	< 0.05	0.43	2.7	0.25
E832220	< 0.005	1	19.3	2.49	0.23	7.15	3.96	1.05	< 0.1	23	9.6	224	1.51	0.4	2.2	0.7	0.9	0.3	< 10	< 0.05	1.31	3.1	0.71
E832221	0.007	24	0.7	0.04	0.32	0.30	0.06	5.86	0.2	10	8.7	1560	0.34	0.1	10.6	0.2	< 0.1	< 0.1	30	< 0.05	0.21	1.7	0.09
E832222	< 0.005	1	47.5	1.19	1.14	6.73	2.08	1.62	< 0.1	45	70.6	370	3.09	2.3	44.8	1.7	1.6	0.6	< 10	< 0.05	3.86	12.0	0.94
E832223	0.021	1	26.8	0.10	0.52	4.47	0.50	2.47	0.6	41	77.7	352	2.24	0.2	201	14.8	1.8	5.0	170	0.70	5.74	18.2	10.4
E832224	0.049	< 1	24.4	0.25	0.20	4.63	0.36	2.90	0.9	44	71.1	2280	2.69	1.9	501	9.7	1.7	3.1	20	1.97	2.91	23.2	6.48
E832225	0.006	< 1	10.7	2.13	0.63	5.11	1.22	1.84	< 0.1	41	49.6	281	1.69	1.9	21.0	0.7	0.8	0.2	< 10	< 0.05	0.63	6.5	0.45
E832226	< 0.005	7	2.0	0.13	0.12	0.78	0.12	2.59	0.5	13	23.4	1030	3.18	0.3	13.4	0.5	0.2	0.2	< 10	0.07	0.56	5.8	0.30
E832227	0.006	22	9.3	1.60	1.42	5.42	0.60	3.00	< 0.1	124	105	900	4.60	3.0	40.9	1.9	0.6	0.5	< 10	< 0.05	0.78	19.6	0.50
E832228	0.055	2	97.4	0.90	0.75	5.67	0.67	1.52	0.3	56	118	374	2.91	2.0	333	1.8	1.1	0.6	20	< 0.05	4.80	42.9	1.01
E832229	0.007	18	0.6	0.03	0.10	0.50	0.04	4.40	0.4	6	67.2	97	0.38	0.2	22.6	0.4	0.1	0.1	30	0.08	0.26	3.1	0.20
E832230	2.83	2	5.3	1.22	1.07	4.52	1.64	2.47	< 0.1	56	60.9	479	2.96	0.9	25.9	1.4	0.8	0.4	< 10	1.04	14.7	13.6	0.57
E832231	0.009	24	0.6	0.03	0.31	0.18	0.05	4.58	0.1	3	6.7	108	0.35	< 0.1	3.8	< 0.1	< 0.1	< 0.1	< 10	< 0.05	0.28	0.4	< 0.05
E832232	< 0.005	15	1.0	0.05	0.14	0.52	0.06	3.23	0.6	19	10.5	394	0.66	0.2	18.0	0.4	0.1	0.1	20	0.07	0.42	2.5	0.20
E832233	< 0.005	20	< 0.5	0.02	0.33	0.19	0.03	5.15	0.1	5	7.5	336	0.08	< 0.1	33.4	0.1	< 0.1	< 0.1	10	< 0.05	0.21	0.6	< 0.05
E832234	< 0.005	1	47.1	1.55	1.26	7.10	2.22	1.56	0.2	65	95.4	896	4.81	3.2	60.8	1.6	1.5	0.5	< 10	< 0.05	3.74	19.9	0.87
E832235	< 0.005	3	7.5	0.22	0.27	1.64	0.36	3.43	1.1	36	36.0	345	1.92	0.9	14.3	1.2	0.4	0.4	< 10	0.15	1.80	3.8	0.69
E832236	< 0.005	2	11.1	0.37	0.22	2.08	0.25	2.92	1.4	59	40.8	605	1.46	0.7	25.7	1.2	0.5	0.4	< 10	0.15	1.18	12.1	0.71
E832237	< 0.005	3	24.6	1.95	1.53	5.53	1.40	3.89	< 0.1	61	84.8	431	2.46	3.4	44.8	1.2	1.0	0.4	< 10	< 0.05	1.21	11.9	0.68

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS		
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu		
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm		
E832238	0.243	45	24.2	0.26	0.69	3.82	0.30	3.52	1.1	68	131	556	2.33	1.5	477	5.8	1.0	2.0	110	0.38	3.98	16.8	4.04		
E832239	0.006	26	1.2	0.05	0.31	0.50	0.07	5.55	0.1	9	10.9	58	0.42	0.1	8.2	0.3	0.2	< 0.1	60	< 0.05	0.21	0.9	0.19		
E832240	< 0.005	1	22.8	2.55	0.27	7.28	3.23	1.07	< 0.1	22	16.1	247	1.80	1.4	2.8	0.7	0.9	0.3	< 10	< 0.05	1.58	3.9	0.63		
GXR-1 Meas		17	7.1	0.04	0.19	1.59	0.04	0.82	2.3	75	18.0	853	22.9	0.4	43.7		0.8		3410	30.4	2.10	7.5	0.49		
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690		
GXR-1 Meas		< 1	7.5	0.04	0.20	1.90	0.04	0.89	2.5	83	17.6	898	23.9	0.5	43.2		0.9		2000	32.3	2.31	7.6	0.56		
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690		
DH-1a Meas																									
DH-1a Cert																									
DH-1a Meas																									
DH-1a Cert																									
DH-1a Meas																									
DH-1a Cert																									
GXR-4 Meas		1	11.2	0.53	1.73	6.36	4.09	0.98	0.2	90	42.8	175	3.15	1.2	44.7		2.0		10	3.68	2.34	15.2	1.26		
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63		
GXR-4 Meas		1	10.6	0.52	1.63	5.88	4.24	0.98	0.3	90	51.8	172	3.00	1.2	42.0		1.9		< 10	3.49	2.21	13.9	1.28		
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63		
SDC-1 Meas		< 1	34.9	1.41	0.78	7.57	1.68	0.91		49	46.1	870	4.55	1.0	34.4		3.4	2.8	1.1	< 10		3.31	16.9	1.29	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0		4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas		15	36.0	1.54	0.82	7.86	2.74	0.98		45	45.7	904	4.89	1.0	38.1		3.5	2.9	1.1	< 10		3.43	18.7	1.34	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0		4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas		27	34.8	1.49	1.00	7.48	1.61	0.98		66	64.4	899	4.71	1.2	38.7		3.6	2.8	1.1	< 10		3.32	17.8	1.33	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0		4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas		26	32.9	0.09	0.57	> 10.0	1.56	0.14	< 0.1	146	66.9	1030	5.33	2.5	24.7		1.1		50	0.19	3.36	13.1	0.55		
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760		
GXR-6 Meas		2	34.7	0.09	0.60	> 10.0	1.94	0.15	0.1	135	67.4	1120	5.83	2.3	26.9		1.1		20	0.20	3.82	14.3	0.58		
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760		
GXR-6 Meas		< 1	33.8	0.10	0.59	> 10.0	1.96	0.16	< 0.1	113	53.6	1080	5.69	1.7	26.2		1.0		30	0.23	3.70	13.8	0.62		
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760		
DNC-1a Meas			4.6							146	197				275							55.4	0.51		
DNC-1a Cert			5.2							148	270				247								57	0.59	
DNC-1a Meas			4.8							154	155				261								60.1	0.53	
DNC-1a Cert			5.2							148	270				247									57	0.59
SBC-1 Meas			162						0.4	206	95.6			3.0	87.3		3.4	3.1	1.1			6.75	22.1	1.65	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8		3.80	3.20	1.40			8.2	22.7	1.98	
SBC-1 Meas			168						0.4	218	95.6			3.5	88.9		3.6	3.4	1.1			7.16	22.8	1.70	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8		3.80	3.20	1.40			8.2	22.7	1.98	
SBC-1 Meas			156						0.3	208	77.7			3.2	90.7		3.6	3.1	1.1			6.86	22.0	1.70	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8		3.80	3.20	1.40			8.2	22.7	1.98	
OREAS 45d (4-Acid) Meas			21.3	0.09	0.23	7.27	0.42	0.16		98	504	508	14.3	1.9	251		1.4	0.7	0.4			3.25	30.9	0.55	
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0		1.38	0.79	0.46			3.910	29.50	0.57	
OREAS 45d			21.1	0.09	0.24	7.37	0.43	0.18		113	531	522	14.6	2.2	255		1.3	0.8	0.4			3.32	31.4	0.53	

Results

Activation Laboratories Ltd.

Report: A17-09167

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
(4-Acid) Meas																							
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			20.4	0.09	0.23	7.19	0.42	0.18		165	528	509	14.1	3.3	248	1.4	0.7	0.4			3.20	28.5	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			18.3						6.0	23	57.5			2.2	52.5	2.8	6.8	0.9	1260		1.45	13.3	1.18
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			18.3						5.6	22	38.8			3.5	52.9	2.8	7.0	0.9	800		1.51	14.1	1.18
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 223 (Fire Assay) Meas	1.69																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 218 Meas	0.503																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.503																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.499																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.511																						
OREAS 218 Cert	0.531																						
E832036 Orig		1	21.1	2.83	0.78	7.37	1.95	2.07	< 0.1	51	58.6	370	2.42	1.0	42.9	1.0	1.3	0.3	< 10	< 0.05	1.24	9.8	0.64
E832036 Dup		< 1	19.3	2.54	0.70	6.66	1.73	1.89	< 0.1	26	67.0	322	2.24	2.6	39.1	0.8	1.1	0.3	< 10	2.21	1.13	8.8	0.54
E832043 Orig	< 0.005																						
E832043 Dup	< 0.005																						
E832053 Orig	0.043																						
E832053 Dup	0.011																						
E832063 Orig	< 0.005																						
E832063 Dup	< 0.005																						
E832067 Orig		2	38.2	2.29	1.04	6.30	1.41	2.16	< 0.1	49	89.4	808	4.32	1.9	47.5	1.2	2.2	0.4	< 10	< 0.05	4.84	19.4	0.68
E832067 Dup		< 1	37.9	2.43	1.06	6.40	1.45	2.33	< 0.1	46	137	798	4.46	3.4	46.8	1.5	1.0	0.5	< 10	< 0.05	4.32	17.0	0.80
E832069 Orig	0.008																						
E832069 Dup	0.008																						
E832079 Orig	0.013	8	66.3	2.25	1.27	6.73	1.23	2.30	< 0.1	40	86.4	674	4.22	2.9	55.4	1.3	1.2	0.4	< 10	< 0.05	2.30	17.4	0.65
E832079 Dup	0.014	21	66.4	2.33	1.15	5.27	0.88	2.23	< 0.1	82	106	650	4.17	4.7	53.3	1.1	1.1	0.3	< 10	< 0.05	2.16	17.1	0.50
E832088 Orig	< 0.005																						
E832088 Dup	< 0.005																						
E832217 Orig	0.019																						
E832217 Dup	0.021																						

Results

Activation Laboratories Ltd.

Report: A17-09167

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832224 Orig	< 1	24.4	0.25	0.20	4.63	0.36	2.90	0.9	44	71.1	2280	2.69	1.9	501	9.7	1.7	3.1	20	1.97	2.91	23.2	6.48	
E832224 Dup	< 1	22.6	0.24	0.18	4.14	0.33	2.58	0.9	40	62.7	2080	2.42	1.7	453	8.8	1.4	2.8	< 10	1.75	2.57	20.9	5.83	
E832232 Orig	< 0.005																						
E832232 Dup	0.010																						
Method Blank	18	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	
Method Blank	19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	
Method Blank	19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832034	0.19	0.3	63.5	14.1	55.9	45.7	17.3	60	0.3	0.06	< 0.1	< 1	< 0.1	< 0.1	402	38.3	99.3	9.6	33.9	5.6	4.2	0.5	3.4
E832035	0.77	0.6	81.1	19.9	432	41.6	19.5	259	4.8	0.35	< 0.1	1	1.5	< 0.1	309	24.9	75.3	6.2	22.9	4.2	3.6	0.5	3.5
E832036	0.14	0.2	26.3	12.4	0.7	56.5	9.6	77	2.2	0.42	< 0.1	< 1	< 0.1	< 0.1	529	24.9	51.7	5.5	19.2	2.8	2.3	0.3	1.8
E832037	0.15	< 0.1	39.9	13.6	1.0	56.8	9.3	160	2.6	0.48	< 0.1	1	< 0.1	< 0.1	451	10.7	27.3	2.9	10.9	2.1	1.8	0.2	1.7
E832038	0.17	< 0.1	54.6	17.2	1.5	66.0	9.6	108	0.5	0.20	< 0.1	< 1	< 0.1	< 0.1	423	17.4	37.4	4.4	15.5	2.7	2.2	0.3	1.8
E832039	0.43	0.1	87.4	28.0	13.8	53.9	8.5	131	2.3	0.37	< 0.1	< 1	< 0.1	< 0.1	295	8.7	18.5	2.0	7.7	1.3	1.3	0.2	1.4
E832040	0.03	< 0.1	52.8	14.9	< 0.1	100	7.0	320	8.1	1.24	< 0.1	< 1	< 0.1	< 0.1	821	43.0	120	10.5	36.1	4.7	3.3	0.3	1.6
E832041	0.23	< 0.1	94.8	24.4	8.2	23.5	23.4	113	0.2	0.07	< 0.1	< 1	< 0.1	< 0.1	223	6.8	15.6	1.9	7.5	2.0	2.5	0.5	3.9
E832042	0.26	0.3	30.6	14.1	2.9	47.3	8.5	149	4.7	0.39	< 0.1	1	< 0.1	< 0.1	392	10.8	25.0	2.5	9.1	1.7	1.4	0.2	1.5
E832043	0.47	0.3	130	26.6	34.5	29.7	15.3	195	0.5	0.05	< 0.1	< 1	< 0.1	< 0.1	356	10.5	30.9	2.9	11.7	2.7	2.7	0.4	2.7
E832044	0.67	0.1	63.1	25.4	11.7	30.4	11.6	110	0.5	0.21	< 0.1	< 1	< 0.1	< 0.1	224	17.2	34.9	3.7	13.0	2.2	2.0	0.3	2.1
E832045	0.22	0.3	32.6	14.4	9.5	40.9	18.9	163	7.3	0.43	< 0.1	2	0.1	< 0.1	425	28.6	42.8	7.0	26.6	4.0	3.6	0.5	3.1
E832046	0.47	< 0.1	75.6	18.9	7.7	80.4	8.7	114	1.8	0.93	< 0.1	< 1	0.1	< 0.1	306	12.5	26.4	2.8	10.3	1.8	1.6	0.2	1.5
E832047	0.56	0.2	62.7	18.3	8.3	53.9	11.1	133	6.1	0.66	< 0.1	2	0.1	< 0.1	328	13.5	30.1	3.1	11.4	2.1	2.0	0.3	1.9
E832048	0.57	0.2	87.5	21.8	32.3	31.7	15.2	178	5.5	0.67	< 0.1	< 1	0.1	< 0.1	234	21.2	47.2	5.3	19.9	3.9	3.3	0.4	2.9
E832049	0.19	0.3	32.1	13.9	6.9	55.4	8.6	180	2.2	0.30	< 0.1	< 1	< 0.1	< 0.1	502	13.7	29.1	3.3	11.9	2.1	1.7	0.2	1.6
E832050	0.90	< 0.1	61.3	17.6	5.8	667	15.3	51	0.1	0.54	< 0.1	< 1	0.1	< 0.1	59	4.3	11.5	1.6	7.6	2.1	2.4	0.4	2.8
E832051	0.28	0.1	64.2	17.7	6.2	28.1	9.9	289	4.9	0.51	< 0.1	2	< 0.1	< 0.1	403	12.7	35.7	3.7	13.9	2.7	2.1	0.3	2.0
E832052	0.24	0.1	32.8	18.3	5.9	45.8	7.1	147	2.9	0.93	< 0.1	1	< 0.1	< 0.1	385	9.7	21.4	2.5	9.1	1.6	1.4	0.2	1.3
E832053	0.18	< 0.1	29.1	13.2	5.2	47.6	7.8	168	4.6	0.42	< 0.1	1	0.1	< 0.1	432	11.7	25.9	2.8	10.2	1.7	1.7	0.2	1.4
E832054	0.14	< 0.1	35.0	14.0	3.5	66.0	10.0	80	2.0	0.44	< 0.1	1	< 0.1	< 0.1	481	13.0	29.1	3.3	12.9	2.3	1.9	0.3	1.8
E832055	0.16	< 0.1	56.3	13.4	0.7	86.9	9.3	74	0.3	0.07	< 0.1	< 1	< 0.1	< 0.1	519	17.9	39.9	4.2	15.5	2.5	1.9	0.3	1.7
E832056	0.16	0.1	69.4	14.4	1.9	85.3	8.5	128	0.3	0.06	< 0.1	< 1	< 0.1	< 0.1	494	12.8	28.5	3.2	12.1	2.1	1.7	0.2	1.6
E832057	0.39	0.7	79.8	14.9	11.9	45.1	12.6	110	6.7	1.25	< 0.1	2	0.1	< 0.1	228	18.4	47.1	4.3	16.3	2.9	2.7	0.4	2.5
E832058	0.10	< 0.1	64.2	13.5	1.9	67.1	10.5	154	0.6	0.15	< 0.1	< 1	< 0.1	< 0.1	539	15.4	38.8	4.8	20.4	3.6	2.5	0.3	2.0
E832059	0.52	< 0.1	30.7	12.4	2.9	49.2	10.3	183	2.7	0.12	< 0.1	< 1	< 0.1	< 0.1	426	15.2	33.6	3.9	14.8	2.5	2.1	0.3	1.9
E832060	0.05	< 0.1	75.5	13.5	< 0.1	182	56.2	350	10.9	5.95	< 0.1	< 1	< 0.1	0.3	866	170	442	49.1	199	31.3	19.7	2.1	12.4

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832061	0.12	0.1	22.3	9.8	5.9	53.7	8.9	163	1.4	0.14	< 0.1	< 1	< 0.1	< 0.1	482	11.7	26.0	3.0	11.8	2.0	1.8	0.2	1.7
E832062	0.43	< 0.1	124	18.7	78.2	27.9	30.1	342	2.4	0.15	< 0.1	1	< 0.1	< 0.1	345	26.4	161	7.7	33.7	7.1	6.6	0.9	5.7
E832063	0.31	0.3	60.9	15.9	21.3	52.6	10.0	177	8.3	1.09	< 0.1	2	0.2	< 0.1	334	14.8	31.1	3.3	12.3	2.3	1.8	0.3	1.9
E832064	0.37	0.2	33.3	10.5	2.9	57.8	9.5	167	5.8	0.38	< 0.1	2	< 0.1	< 0.1	491	13.9	33.7	3.4	12.6	2.5	2.0	0.3	1.8
E832065	0.35	< 0.1	61.2	15.9	17.1	37.1	8.1	104	0.9	0.48	< 0.1	< 1	< 0.1	< 0.1	281	12.3	25.5	2.8	10.2	2.0	1.7	0.2	1.5
E832066	0.12	< 0.1	33.6	9.8	2.8	48.0	7.1	110	4.4	0.37	< 0.1	< 1	< 0.1	< 0.1	430	9.2	21.6	2.4	9.2	1.6	1.4	0.2	1.3
E832067	0.14	< 0.1	67.5	12.1	8.5	99.6	11.8	81	0.8	17.1	< 0.1	< 1	< 0.1	< 0.1	408	10.8	26.1	3.1	12.6	2.6	2.0	0.3	2.1
E832068	0.10	< 0.1	44.1	10.8	2.6	86.7	10.1	126	2.0	0.11	< 0.1	< 1	< 0.1	< 0.1	438	11.3	26.3	2.7	10.5	1.9	1.7	0.2	1.7
E832069	0.14	< 0.1	33.6	10.6	2.0	47.8	8.5	126	0.4	0.07	< 0.1	< 1	< 0.1	< 0.1	427	13.2	31.0	3.2	12.1	2.1	1.7	0.2	1.6
E832070	1.06	< 0.1	53.2	16.7	4.5	601	13.3	29	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	57	3.9	10.5	1.4	6.9	1.9	2.4	0.4	2.6
E832071	0.12	< 0.1	37.5	5.1	1430	44.7	10.3	38	6.2	3.18	< 0.1	1	0.4	< 0.1	667	14.0	34.3	3.8	14.5	2.4	2.0	0.3	1.9
E832072	0.13	< 0.1	33.9	10.6	2.7	66.2	10.8	138	2.5	0.18	< 0.1	< 1	< 0.1	< 0.1	445	21.3	48.9	5.3	19.7	3.1	2.3	0.3	2.1
E832073	0.17	< 0.1	51.8	12.1	3.5	78.0	9.7	19	0.7	0.07	< 0.1	< 1	< 0.1	< 0.1	556	14.9	38.1	3.7	13.8	2.5	2.1	0.3	1.8
E832074	0.34	0.3	52.4	12.4	8.6	48.6	11.9	100	4.5	0.64	< 0.1	1	< 0.1	< 0.1	279	19.2	47.8	4.6	17.3	2.9	2.6	0.4	2.4
E832075	0.16	0.8	62.0	13.6	9.2	10.7	15.7	91	2.8	0.83	< 0.1	< 1	< 0.1	< 0.1	170	15.5	32.8	3.7	14.2	2.9	2.8	0.5	3.2
E832076	0.21	< 0.1	52.6	14.5	2.0	82.1	9.4	120	1.2	0.10	< 0.1	< 1	< 0.1	< 0.1	570	15.5	35.1	3.7	13.7	2.3	1.8	0.2	1.7
E832077	0.16	0.1	46.9	12.8	1.5	78.7	9.3	121	0.6	0.09	< 0.1	< 1	< 0.1	< 0.1	563	15.4	38.4	3.7	13.7	2.3	2.0	0.3	1.8
E832078	0.48	0.1	68.7	19.8	21.1	76.4	11.6	115	7.6	0.90	< 0.1	1	0.2	< 0.1	369	17.3	42.4	3.9	14.5	2.5	2.4	0.3	2.2
E832079	0.37	< 0.1	62.8	16.1	6.0	58.9	11.7	131	0.4	0.05	< 0.1	< 1	< 0.1	< 0.1	342	14.3	36.2	3.8	14.4	2.6	2.3	0.3	2.2
E832080	0.04	< 0.1	49.8	10.2	< 0.1	126	15.5	250	8.3	1.10	< 0.1	2	< 0.1	< 0.1	912	66.3	150	15.4	54.6	8.4	5.6	0.6	3.6
E832081	0.12	< 0.1	30.8	10.4	6.1	45.8	8.6	163	2.7	0.33	< 0.1	< 1	< 0.1	< 0.1	462	11.3	25.8	2.9	11.1	1.9	1.7	0.2	1.6
E832082	0.14	< 0.1	26.3	10.4	6.8	53.8	7.8	30	2.0	0.40	< 0.1	< 1	< 0.1	< 0.1	454	9.8	21.4	2.4	9.4	1.7	1.3	0.2	1.4
E832083	0.10	< 0.1	23.1	8.9	1.9	48.0	8.8	151	4.2	0.18	< 0.1	1	< 0.1	< 0.1	472	11.1	25.7	3.1	11.9	2.2	1.8	0.3	1.7
E832084	0.14	< 0.1	40.4	12.2	1.2	52.4	8.3	162	1.9	0.08	< 0.1	< 1	< 0.1	< 0.1	409	11.9	26.6	3.0	10.9	2.0	1.6	0.2	1.5
E832085	0.21	< 0.1	26.9	12.9	3.7	56.4	7.4	153	0.9	0.16	< 0.1	< 1	< 0.1	< 0.1	485	10.0	21.9	2.3	8.8	1.6	1.4	0.2	1.3
E832086	0.28	< 0.1	50.6	17.0	6.5	76.7	8.0	131	4.3	0.45	< 0.1	2	< 0.1	< 0.1	407	10.0	22.7	2.5	9.7	1.8	1.5	0.2	1.5
E832087	0.23	< 0.1	63.7	18.5	51.6	59.7	8.3	138	4.9	0.59	< 0.1	1	0.1	< 0.1	331	8.7	19.4	2.1	7.9	1.5	1.4	0.2	1.5
E832088	0.13	< 0.1	44.1	10.5	1.4	79.4	9.2	122	0.3	0.06	< 0.1	< 1	< 0.1	< 0.1	568	19.0	47.2	4.4	16.8	2.5	2.1	0.3	1.7
E832089	0.35	< 0.1	39.9	15.0	5.4	48.5	7.8	132	1.0	0.27	< 0.1	< 1	< 0.1	< 0.1	377	12.5	28.1	3.0	11.1	2.0	1.5	0.2	1.5
E832090	0.84	< 0.1	49.7	16.5	8.0	475	12.5	58	0.3	2.02	< 0.1	< 1	0.2	< 0.1	50	3.7	10.0	1.4	6.7	1.8	2.2	0.4	2.5
E832091	0.11	< 0.1	31.3	12.3	14.6	67.0	7.6	141	4.7	0.43	< 0.1	1	0.1	< 0.1	499	10.7	24.2	2.7	10.6	1.8	1.4	0.2	1.4
E832092	0.14	2.1	35.2	5.8	37.2	15.6	79.4	18	3.0	1.29	< 0.1	< 1	0.5	< 0.1	248	189	304	50.3	208	35.6	24.4	2.7	16.4
E832093	0.22	< 0.1	37.9	13.9	4.2	47.4	12.4	179	1.3	0.15	< 0.1	< 1	< 0.1	< 0.1	397	36.2	78.2	8.3	30.5	4.4	3.3	0.4	2.6
E832094	0.07	< 0.1	21.0	9.3	1.5	58.0	8.1	38	2.3	0.20	< 0.1	< 1	< 0.1	< 0.1	542	15.7	36.6	4.0	15.0	2.4	1.8	0.2	1.6
E832095	0.23	< 0.1	51.0	15.7	18.9	54.9	11.0	139	0.7	0.18	< 0.1	< 1	< 0.1	< 0.1	387	20.5	46.1	4.9	18.7	2.9	2.6	0.3	2.2
E832096	0.26	< 0.1	57.7	14.7	28.4	51.7	24.1	224	5.5	0.45	< 0.1	1	0.4	< 0.1	462	41.9	84.7	9.5	34.6	5.4	4.8	0.6	4.2
E832097	0.22	0.3	41.6	19.8	5.7	47.9	7.9	121	3.1	2.02	< 0.1	1	< 0.1	< 0.1	372	11.5	25.0	2.9	10.5	1.7	1.7	0.2	1.5
E832098	0.20	< 0.1	46.9	12.5	10.8	63.5	15.4	156	10.5	0.54	< 0.1	2	0.2	< 0.1	403	20.5	44.6	5.9	22.4	4.0	3.5	0.4	3.0
E832217	0.08	4.5	54.8	< 0.1	62.9	10.9	79.0	25	2.1	1.01	< 0.1	< 1	0.8	< 0.1	266	106	95.4	31.1	124	21.0	16.5	2.0	12.9
E832218	< 0.02	0.4	10.8	0.3	1.2	1.7	0.8	2	0.3	0.51	< 0.1	< 1	< 0.1	< 0.1	38	1.2	2.0	0.3	1.2	0.2	0.2	< 0.1	0.1
E832219	0.05	1.2	9.6	< 0.1	1.2	4.6	5.2	38	0.8	1.32	< 0.1	< 1	1.4	< 0.1	131	8.2	16.1	2.3	8.4	1.4	1.0	0.1	1.0
E832220	0.02	< 0.1	40.7	7.7	< 0.1	129	7.9	51	1.4	0.84	< 0.1	< 1	< 0.1	< 0.1	896	74.0	159	17.5	58.9	7.6	5.1	0.4	2.3
E832221	0.03	1.9	4.7	< 0.1	2.0	2.2	1.6	5	0.6	2.13	< 0.1	< 1	0.4	< 0.1	164	2.9	5.8	0.8	2.9	0.5	0.3	< 0.1	0.3

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832222	0.25	0.2	77.5	13.7	1.2	117	15.0	91	2.0	0.10	< 0.1	< 1	< 0.1	< 0.1	581	34.2	77.8	8.7	30.8	4.7	3.8	0.5	3.2
E832223	0.26	2.2	57.2	4.3	98.1	39.1	141	12	3.2	0.67	< 0.1	< 1	1.7	< 0.1	300	413	568	110	397	70.7	46.2	5.2	31.4
E832224	0.16	2.7	52.5	2.7	20.4	22.7	104	72	4.7	1.16	< 0.1	< 1	0.5	< 0.1	295	205	207	53.5	206	35.4	26.1	2.9	17.9
E832225	0.06	< 0.1	25.6	10.4	2.1	40.7	6.7	82	4.1	0.31	< 0.1	< 1	0.1	< 0.1	346	7.4	17.3	2.1	7.8	1.5	1.4	0.2	1.3
E832226	0.05	1.1	17.7	0.3	112	4.9	5.3	11	1.1	0.90	< 0.1	< 1	0.2	< 0.1	145	10.8	22.7	2.8	9.9	1.7	1.3	0.1	1.1
E832227	0.16	< 0.1	59.6	19.3	0.1	19.9	15.0	124	1.2	0.12	< 0.1	< 1	< 0.1	< 0.1	203	5.5	12.5	1.6	6.1	1.6	1.9	0.3	2.7
E832228	0.23	0.2	56.5	14.4	104	30.6	16.1	91	0.3	0.15	< 0.1	< 1	< 0.1	< 0.1	264	39.8	73.2	9.6	33.3	5.6	4.1	0.5	3.3
E832229	0.02	1.2	29.0	< 0.1	0.8	2.3	3.8	9	0.6	0.95	< 0.1	< 1	0.5	< 0.1	138	5.0	9.6	1.6	5.7	1.0	0.8	0.1	0.7
E832230	0.77	< 0.1	44.4	15.1	5.0	468	11.4	39	0.1	0.48	< 0.1	< 1	< 0.1	< 0.1	46	3.4	9.1	1.3	6.1	1.8	2.2	0.3	2.5
E832231	< 0.02	0.7	8.1	< 0.1	2.6	1.9	0.7	4	0.5	3.98	< 0.1	< 1	0.2	< 0.1	100	1.1	2.4	0.3	1.0	0.2	0.2	< 0.1	0.1
E832232	0.07	0.9	16.8	< 0.1	2.8	2.9	4.1	13	0.9	3.29	< 0.1	< 1	< 0.1	< 0.1	107	13.2	28.1	2.8	9.9	1.4	1.2	0.1	0.7
E832233	< 0.02	1.7	11.7	< 0.1	0.8	1.3	1.1	1	0.3	1.40	< 0.1	< 1	1.9	< 0.1	55	1.3	2.3	0.4	1.4	0.2	0.2	< 0.1	0.2
E832234	0.22	< 0.1	76.3	13.0	13.6	109	14.1	127	3.0	0.26	< 0.1	1	0.1	< 0.1	620	28.1	70.0	7.1	26.5	4.4	3.2	0.4	2.9
E832235	0.24	1.8	42.3	2.8	14.9	21.4	11.8	42	3.3	0.89	< 0.1	< 1	0.7	< 0.1	227	30.5	69.1	7.6	27.4	4.4	3.1	0.4	2.5
E832236	0.15	1.6	30.4	4.0	7.5	13.0	12.4	31	3.1	1.58	< 0.1	< 1	0.5	< 0.1	167	27.8	62.8	6.5	23.9	3.8	3.0	0.4	2.4
E832237	0.12	< 0.1	33.5	9.3	6.6	47.4	11.7	150	2.6	0.23	< 0.1	< 1	< 0.1	< 0.1	390	19.6	44.3	5.0	18.2	3.0	2.5	0.3	2.2
E832238	0.11	2.8	39.1	4.3	317	15.7	66.2	63	3.4	0.51	< 0.1	< 1	1.1	< 0.1	228	198	155	45.6	171	26.3	17.8	2.0	12.1
E832239	0.03	1.5	5.6	< 0.1	2.4	2.8	3.2	3	0.7	0.65	< 0.1	< 1	0.3	< 0.1	112	12.2	21.3	2.6	8.9	1.1	0.9	< 0.1	0.6
E832240	0.02	< 0.1	48.8	11.1	< 0.1	122	7.5	135	3.2	0.93	< 0.1	< 1	< 0.1	< 0.1	887	64.7	144	15.3	53.7	7.5	4.1	0.4	2.1
GXR-1 Meas	1310	14.6	719	6.3	414	2.5	23.2	25	0.8	18.3	0.8	30	47.1	9.7	596	6.4	14.5		8.3	2.5	3.5	0.6	4.2
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1300	17.3	792	5.8	449	2.9	28.7	26	0.8	19.4	0.7	29	43.4	9.4	614	6.9	15.3		8.6	2.9	3.7	0.6	4.8
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
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DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	17.5	5.5	67.2	18.5	109	143	13.6	45	10.2	316	0.2	7	4.8	0.8	147	53.9	105		45.1	6.0	4.2	0.4	2.7
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
GXR-4 Meas	17.5	6.0	68.3	15.1	106	142	12.8	42	10.1	339	0.2	8	4.6	0.9	141	51.9	109		42.6	6.0	4.4	0.5	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			95.4	18.0	< 0.1	94.7		41	0.4			< 1	< 0.1		571	35.3	86.3		40.2	6.9	6.1	0.8	6.0
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			102	19.8	< 0.1	118		41	1.9			< 1	0.2		609	37.6	91.5		42.5	7.5	6.2	0.9	6.1
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			105	18.9	< 0.1	90.6		49	3.4			1	0.2		562	32.7	85.3		37.8	7.1	6.1	0.9	6.2
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.17	< 0.1	117	20.7	280	70.6	11.6	96	2.7	1.07	< 0.1	< 1	1.4	< 0.1	1090	11.3	35.7		12.9	2.3	2.3	0.3	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.19	< 0.1	141	21.5	275	78.7	12.6	85	0.2	0.55	< 0.1	< 1	0.4	< 0.1	1200	11.9	36.5		13.6	2.5	2.1	0.3	2.4
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	0.18	0.5	135	18.8	241	83.7	12.5	66	0.1	0.25	< 0.1	< 1	0.2	< 0.1	1160	11.9	36.9		13.4	2.5	2.2	0.3	2.5
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			60.6	13.3		3.5	15.8	43	1.3				0.4		97	3.4			5.2				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			63.1	15.0		3.7	17.0	40	1.6				0.6		104	3.7			5.6				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.61		175	23.0	22.8	107	30.3	126	12.3	2.31		3	1.2		529	46.1	111	13.1	50.8	8.9	7.4	0.9	6.5
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.71		197	22.8	27.5	144	31.3	135	15.3	2.38		4	1.4		752	48.7	111	13.5	53.0	9.5	7.5	1.0	6.7
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.63		184	20.2	25.1	137	30.1	130	14.4	2.22		4	1.3		724	44.6	106	12.8	48.7	9.4	7.1	1.0	6.6
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.33		40.5	20.9	5.4	40.8	10.8	74	0.5	0.30	< 0.1	< 1	< 0.1		171	15.8	38.2	4.2	15.6	2.7	2.5	0.3	2.5
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.31		40.2	22.0	8.0	40.8	11.1	93	0.7	0.45	< 0.1	< 1	< 0.1		174	15.8	38.4	4.2	15.3	2.6	2.3	0.3	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.33		36.4	23.0	15.1	41.8	11.0	141	3.6	1.06	< 0.1	1	2.5		168	15.4	38.4	4.2	14.8	2.8	2.3	0.3	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	0.96		776	11.8		103	24.0	115	6.5	12.3					872	41.6	102	11.2	40.7	6.5	5.1	0.7	4.9
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	1.00		803	11.7		120	24.6	128	7.3	10.9					951	41.7	99.8	11.0	40.0	6.5	5.0	0.7	4.9
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
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OREAS 218 Cert																							
E832036 Orig	0.14	0.2	26.3	12.4	0.7	56.5	9.6	77	2.2	0.42	< 0.1	< 1	< 0.1	< 0.1	529	24.9	51.7	5.5	19.2	2.8	2.3	0.3	1.8
E832036 Dup	0.12	< 0.1	24.9	12.1	0.2	51.1	8.2	114	0.4	1.24	< 0.1	< 1	< 0.1	< 0.1	473	12.4	26.6	3.0	11.1	2.0	1.6	0.2	1.5



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
E832043 Orig																								
E832043 Dup																								
E832053 Orig																								
E832053 Dup																								
E832063 Orig																								
E832063 Dup																								
E832067 Orig	0.14	< 0.1	67.5	12.1	8.5	99.6	11.8	81	0.8	17.1	< 0.1	< 1	< 0.1	< 0.1	408	10.8	26.1	3.1	12.6	2.6	2.0	0.3	2.1	
E832067 Dup	0.16	< 0.1	73.6	12.5	8.0	91.5	13.9	152	0.4	0.11	< 0.1	< 1	< 0.1	< 0.1	417	18.7	43.6	5.0	19.2	3.5	2.8	0.4	2.6	
E832069 Orig																								
E832069 Dup																								
E832079 Orig	0.37	< 0.1	62.8	16.1	6.0	58.9	11.7	131	0.4	0.05	< 0.1	< 1	< 0.1	< 0.1	342	14.3	36.2	3.8	14.4	2.6	2.3	0.3	2.2	
E832079 Dup	0.34	< 0.1	62.9	15.9	8.1	28.0	9.3	208	3.4	0.28	< 0.1	2	< 0.1	< 0.1	357	7.5	20.8	2.3	9.2	1.9	1.7	0.3	1.8	
E832088 Orig																								
E832088 Dup																								
E832217 Orig																								
E832217 Dup																								
E832224 Orig	0.16	2.7	52.5	2.7	20.4	22.7	104	72	4.7	1.16	< 0.1	< 1	0.5	< 0.1	295	205	207	53.5	206	35.4	26.1	2.9	17.9	
E832224 Dup	0.15	2.4	47.2	2.9	17.0	20.7	93.9	64	4.5	1.06	< 0.1	< 1	0.5	< 0.1	260	186	189	49.2	188	30.4	23.3	2.5	16.0	
E832232 Orig																								
E832232 Dup																								
Method Blank	< 0.02	< 0.1	0.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Method Blank	< 0.02	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Method Blank	< 0.02	< 0.1	0.4	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Method Blank																								
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832034	100	< 0.1	0.3	1.7	0.2	< 0.1	235	< 0.1	< 0.001	0.41	25.9	14.0	3.8
E832035	78.6	0.3	0.3	2.0	0.3	0.3	211	0.4	< 0.001	0.31	25.6	11.7	2.8
E832036	12.8	< 0.1	0.1	1.0	0.1	0.1	298	0.1	< 0.001	0.35	16.2	10.1	1.2
E832037	20.0	0.4	0.1	0.9	0.1	0.2	290	0.1	< 0.001	0.32	14.0	4.5	0.9
E832038	9.4	< 0.1	0.1	0.9	0.1	< 0.1	262	< 0.1	< 0.001	0.39	15.1	14.7	1.5
E832039	20.8	0.4	0.1	1.0	0.2	0.2	184	0.3	< 0.001	0.36	18.3	5.3	1.5
E832040	6.6	< 0.1	< 0.1	0.5	< 0.1	0.3	217	0.4	< 0.001	0.99	38.6	35.3	2.3
E832041	18.8	0.1	0.4	2.7	0.4	< 0.1	159	< 0.1	< 0.001	0.42	16.9	2.6	1.0
E832042	28.0	< 0.1	0.1	0.9	0.1	0.4	240	0.3	< 0.001	0.30	16.1	6.2	1.2
E832043	52.1	< 0.1	0.2	1.5	0.2	< 0.1	324	< 0.1	< 0.001	0.17	22.3	5.2	1.5
E832044	36.4	0.2	0.2	1.2	0.2	< 0.1	165	< 0.1	< 0.001	0.21	18.0	10.0	1.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832045	59.5	0.5	0.3	1.8	0.3	0.5	226	0.5	< 0.001	0.27	15.1	7.3	1.9
E832046	33.4	0.6	0.1	0.9	0.1	< 0.1	139	0.1	< 0.001	0.36	17.3	6.5	1.5
E832047	56.0	0.6	0.2	1.2	0.2	0.4	190	0.6	< 0.001	0.31	22.4	17.9	2.0
E832048	66.0	0.2	0.2	1.6	0.2	0.3	172	0.6	< 0.001	0.23	19.9	11.9	2.1
E832049	20.4	0.4	0.1	0.9	0.1	< 0.1	261	< 0.1	< 0.001	0.37	18.7	7.0	2.6
E832050	39.5	0.3	0.2	1.3	0.2	< 0.1	109	< 0.1	< 0.001	6.69	10.0	0.8	0.3
E832051	24.4	< 0.1	0.2	1.2	0.2	0.2	200	1.0	< 0.001	0.43	21.9	7.6	1.4
E832052	16.0	< 0.1	0.1	0.8	0.1	0.2	241	0.3	< 0.001	0.30	19.5	3.9	1.0
E832053	15.3	< 0.1	0.1	0.8	0.1	0.2	261	0.4	< 0.001	0.27	16.4	5.0	1.0
E832054	8.0	< 0.1	0.1	1.0	0.2	< 0.1	258	< 0.1	< 0.001	0.34	17.1	4.7	1.1
E832055	20.0	< 0.1	0.1	1.0	0.1	< 0.1	205	< 0.1	< 0.001	0.56	15.6	7.9	1.3
E832056	8.7	< 0.1	0.2	0.9	0.1	< 0.1	251	< 0.1	< 0.001	0.37	18.4	5.1	1.1
E832057	38.9	0.3	0.2	1.2	0.2	0.1	133	0.3	< 0.001	0.32	19.0	9.4	1.9
E832058	9.6	0.1	0.1	1.0	0.1	< 0.1	296	< 0.1	< 0.001	0.32	15.2	3.6	1.0
E832059	19.4	0.3	0.2	1.1	0.1	< 0.1	261	< 0.1	< 0.001	0.30	13.7	6.1	1.2
E832060	122	< 0.1	0.7	4.2	0.6	0.3	198	0.5	< 0.001	1.25	48.1	143	11.1
E832061	26.1	0.5	0.1	0.9	0.1	< 0.1	283	< 0.1	< 0.001	0.34	13.5	5.3	1.0
E832062	86.3	< 0.1	0.5	3.1	0.5	< 0.1	247	< 0.1	< 0.001	0.29	23.0	9.9	1.8
E832063	42.6	0.2	0.2	1.1	0.1	0.5	193	0.6	< 0.001	0.34	17.8	6.6	1.5
E832064	15.2	< 0.1	0.1	1.0	0.1	0.3	239	0.3	< 0.001	0.41	15.4	6.9	1.4
E832065	67.4	0.4	0.1	0.8	0.1	< 0.1	155	< 0.1	< 0.001	0.23	18.4	4.7	1.1
E832066	6.1	< 0.1	0.1	0.7	0.1	0.2	247	0.3	< 0.001	0.27	14.5	4.7	0.8
E832067	24.2	0.3	0.2	1.2	0.2	< 0.1	259	19.1	< 0.001	0.40	16.0	3.4	1.0
E832068	6.6	0.4	0.2	1.1	0.2	0.1	244	0.1	< 0.001	0.32	14.1	4.4	1.2
E832069	15.6	0.2	0.1	0.9	0.1	< 0.1	239	< 0.1	< 0.001	0.29	14.7	5.7	1.1
E832070	35.4	0.1	0.2	1.2	0.2	< 0.1	90.9	< 0.1	< 0.001	6.00	9.0	0.7	0.2
E832071	12.0	< 0.1	0.2	1.1	0.2	0.1	219	1.0	< 0.001	0.33	11.5	7.4	1.3
E832072	10.8	< 0.1	0.2	1.1	0.1	0.1	255	< 0.1	< 0.001	0.32	14.7	6.9	1.1
E832073	13.0	< 0.1	0.2	1.0	0.1	< 0.1	241	< 0.1	< 0.001	0.42	19.0	7.4	1.3
E832074	31.7	0.2	0.2	1.2	0.2	0.1	164	0.1	< 0.001	0.28	17.4	9.6	1.7
E832075	97.4	0.2	0.3	1.6	0.2	< 0.1	74.8	0.2	< 0.001	0.08	11.1	8.5	1.4
E832076	14.2	0.2	0.1	1.1	0.2	< 0.1	219	< 0.1	< 0.001	0.47	17.7	6.4	1.4
E832077	17.7	0.2	0.1	1.0	0.1	< 0.1	245	< 0.1	< 0.001	0.44	17.7	6.7	1.2
E832078	37.2	0.7	0.2	1.2	0.2	0.6	171	0.6	< 0.001	0.35	19.4	8.5	1.6
E832079	14.2	< 0.1	0.2	1.2	0.2	< 0.1	218	< 0.1	< 0.001	0.27	17.4	8.6	1.6
E832080	4.9	< 0.1	0.2	1.3	0.2	0.4	240	0.1	< 0.001	1.08	40.6	43.9	2.8
E832081	21.3	< 0.1	0.1	0.9	0.1	0.2	246	0.2	< 0.001	0.30	15.0	4.4	0.9
E832082	12.7	< 0.1	0.1	0.8	0.1	< 0.1	247	< 0.1	< 0.001	0.29	14.4	4.0	0.9
E832083	11.0	< 0.1	0.1	0.9	0.1	0.2	266	0.9	< 0.001	0.29	13.0	4.2	0.9
E832084	6.7	0.3	0.1	0.9	0.1	0.1	235	0.1	< 0.001	0.27	13.6	4.9	1.0
E832085	9.2	0.4	0.1	0.8	0.1	< 0.1	265	< 0.1	< 0.001	0.31	15.5	4.2	0.9
E832086	7.6	0.6	0.1	0.9	0.1	0.1	219	0.1	< 0.001	0.35	17.2	4.7	1.1
E832087	20.7	0.6	0.1	0.9	0.1	0.4	186	0.2	< 0.001	0.31	17.4	4.3	2.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832088	13.8	< 0.1	0.2	1.0	0.1	< 0.1	240	< 0.1	< 0.001	0.45	16.3	7.2	1.3
E832089	30.1	0.2	0.1	0.9	0.1	< 0.1	215	< 0.1	< 0.001	0.36	15.8	6.7	1.0
E832090	33.2	0.2	0.2	1.2	0.1	< 0.1	85.0	< 0.1	< 0.001	5.93	9.0	0.8	0.2
E832091	10.7	< 0.1	0.1	0.8	0.1	0.3	279	0.2	< 0.001	0.36	15.1	4.5	1.0
E832092	753	< 0.1	1.0	6.8	1.0	< 0.1	79.8	1.4	0.003	0.46	10.5	25.1	9.1
E832093	12.1	< 0.1	0.2	1.4	0.2	0.1	239	1.4	< 0.001	0.27	18.0	17.5	1.6
E832094	3.0	< 0.1	0.1	0.8	0.1	< 0.1	299	0.2	< 0.001	0.33	13.8	6.7	0.8
E832095	23.3	0.2	0.2	1.1	0.1	< 0.1	226	< 0.1	< 0.001	0.30	20.5	10.2	1.0
E832096	56.4	0.3	0.3	2.2	0.3	0.4	228	0.4	< 0.001	0.46	19.3	13.2	2.4
E832097	27.3	0.5	0.1	0.8	0.1	< 0.1	223	0.2	0.008	0.28	18.9	6.5	1.3
E832098	35.0	< 0.1	0.2	1.5	0.2	0.7	268	0.5	< 0.001	0.32	13.8	10.1	1.8
E832217	937	< 0.1	1.0	6.5	1.1	< 0.1	62.7	0.4	0.004	0.77	4.8	21.1	11.8
E832218	5.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	27.3	< 0.1	< 0.001	< 0.05	1.3	0.4	0.1
E832219	37.2	< 0.1	< 0.1	0.5	< 0.1	< 0.1	62.5	0.2	< 0.001	0.08	1.9	3.8	1.2
E832220	5.2	< 0.1	< 0.1	0.5	< 0.1	< 0.1	236	0.2	< 0.001	0.93	39.1	50.2	2.8
E832221	18.7	< 0.1	< 0.1	0.2	< 0.1	< 0.1	63.0	0.1	< 0.001	< 0.05	1.2	1.6	13.9
E832222	41.9	< 0.1	0.2	1.5	0.2	0.1	177	0.1	< 0.001	0.71	19.7	15.6	3.4
E832223	285	< 0.1	1.9	11.4	1.7	< 0.1	64.2	0.9	0.006	0.53	13.7	34.2	26.0
E832224	865	< 0.1	1.3	8.6	1.4	0.3	60.3	1.5	< 0.001	1.21	7.7	28.4	14.2
E832225	3.1	0.3	0.1	0.6	< 0.1	0.2	247	0.3	< 0.001	0.20	10.4	2.3	0.6
E832226	18.0	< 0.1	< 0.1	0.5	< 0.1	< 0.1	58.6	0.4	< 0.001	0.07	2.7	3.1	2.5
E832227	19.6	0.4	0.3	1.8	0.3	< 0.1	143	0.1	< 0.001	0.14	11.2	2.3	1.0
E832228	96.7	< 0.1	0.2	1.6	0.2	< 0.1	109	< 0.1	< 0.001	0.40	19.1	9.4	2.9
E832229	52.1	< 0.1	< 0.1	0.4	< 0.1	< 0.1	41.2	0.1	< 0.001	0.05	1.2	2.4	1.7
E832230	32.4	0.2	0.2	1.1	0.2	< 0.1	81.2	< 0.1	< 0.001	5.34	8.3	0.6	0.2
E832231	4.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	43.8	0.1	0.002	< 0.05	0.9	0.4	2.7
E832232	19.0	< 0.1	< 0.1	0.3	< 0.1	< 0.1	45.1	0.5	< 0.001	0.09	1.7	2.5	1.9
E832233	32.7	< 0.1	< 0.1	0.1	< 0.1	< 0.1	65.7	0.2	< 0.001	< 0.05	0.7	0.7	0.4
E832234	38.9	0.2	0.2	1.5	0.2	0.2	198	0.1	< 0.001	0.66	20.7	13.2	2.2
E832235	76.5	< 0.1	0.2	1.1	0.2	0.2	66.6	0.4	< 0.001	0.18	8.0	8.2	14.0
E832236	91.4	< 0.1	0.2	1.1	0.2	< 0.1	75.1	0.4	0.001	0.19	5.3	6.2	2.1
E832237	27.9	0.2	0.2	1.1	0.2	0.1	229	0.2	< 0.001	0.28	11.4	6.3	1.4
E832238	574	< 0.1	0.8	5.0	0.8	0.2	57.5	0.9	0.007	0.54	10.1	19.9	10.5
E832239	18.2	< 0.1	< 0.1	0.3	< 0.1	< 0.1	55.1	0.1	0.001	< 0.05	2.2	2.8	10.1
E832240	6.4	< 0.1	< 0.1	0.5	< 0.1	< 0.1	244	1.4	< 0.001	0.96	39.5	45.0	3.1
GXR-1 Meas	1040		0.3	1.9	0.2	< 0.1	272	145		0.39	696	2.3	34.9
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas	1070		0.3	2.1	0.3	< 0.1	311	148		0.39	724	2.6	34.2
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2390
DH-1a Cert												910	2629
DH-1a Meas												> 500	2450
DH-1a Cert												910	2629

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DH-1a Meas												> 500	2310
DH-1a Cert												910	2629
GXR-4 Meas	6150		0.2	1.0	0.1	0.6	213	34.1		3.34	49.8	19.1	6.0
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas	5990		0.2	1.0	0.1	0.6	217	34.6		3.28	49.8	21.5	5.8
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	27.4		0.5	3.3		< 0.1	161	0.3		0.61	24.1	12.0	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas	30.8		0.5	3.2		0.1	169	< 0.1		0.66	29.8	12.1	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas	31.8		0.5	3.1		0.2	172	0.1		0.64	24.8	11.4	2.7
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	64.7			1.6	0.3	0.2	33.0	1.0		2.29	101	5.4	1.6
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas	73.0			1.7	0.3	< 0.1	36.6	< 0.1		2.43	109	5.4	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas	70.4			1.7	0.3	< 0.1	37.2	< 0.1		2.29	104	5.5	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	97.0			2.0			142				6.3		
DNC-1a Cert	100			2.0			144				6.3		
DNC-1a Meas	98.6			2.0			149				10.2		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	29.3		0.5	3.4	0.5	0.8	171	1.9		0.93	36.1	16.4	6.2
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas	32.2		0.5	3.4	0.5	0.8	182	3.5		0.97	38.0	17.2	6.4
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas	30.1		0.5	3.2	0.5	0.8	175	1.5		0.92	35.6	16.0	5.9
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	371			1.5	0.2	< 0.1	31.0	0.3		0.27	22.9	15.6	3.1
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas	378			1.4	0.2	< 0.1	31.2	< 0.1		0.25	21.6	15.2	3.0
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas	368			1.3	0.2	< 0.1	31.4	0.1		0.26	22.4	15.2	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	236		0.4	2.9	0.4	0.3	135	1.0			764	14.8	2.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	242		0.4	2.7	0.4	0.4	138	1.1			768	14.9	2.6
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
E832036 Orig	12.8	< 0.1	0.1	1.0	0.1	0.1	298	0.1	< 0.001	0.35	16.2	10.1	1.2
E832036 Dup	16.0	0.3	0.1	0.8	0.1	< 0.1	268	< 0.1	< 0.001	0.30	14.1	4.3	1.0
E832043 Orig													
E832043 Dup													
E832053 Orig													
E832053 Dup													
E832063 Orig													
E832063 Dup													
E832067 Orig	24.2	0.3	0.2	1.2	0.2	< 0.1	259	19.1	< 0.001	0.40	16.0	3.4	1.0
E832067 Dup	27.7	0.1	0.2	1.4	0.2	< 0.1	271	< 0.1	< 0.001	0.40	16.7	7.1	1.4
E832069 Orig													
E832069 Dup													
E832079 Orig	14.2	< 0.1	0.2	1.2	0.2	< 0.1	218	< 0.1	< 0.001	0.27	17.4	8.6	1.6
E832079 Dup	14.3	< 0.1	0.2	1.1	0.2	0.1	213	< 0.1	< 0.001	0.29	17.5	5.3	1.3
E832088 Orig													
E832088 Dup													
E832217 Orig													
E832217 Dup													
E832224 Orig	865	< 0.1	1.3	8.6	1.4	0.3	60.3	1.5	< 0.001	1.21	7.7	28.4	14.2
E832224 Dup	784	< 0.1	1.1	7.8	1.3	0.3	57.1	1.5	< 0.001	1.04	7.0	25.4	12.8
E832232 Orig													
E832232 Dup													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank													
Method Blank													
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 25-Aug-17  
**Invoice No.:** A17-09168  
**Invoice Date:** 26-Sep-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

111 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-09168**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

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  
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**Date Submitted:** 25-Aug-17  
**Invoice No.:** A17-09168  
**Invoice Date:** 26-Sep-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

111 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-09168**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-09168

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832466	< 0.005	2	6.5	0.36	10.6	1.99	0.03	7.02	< 0.1	100	2220	1820	8.53	0.5	757	0.8	< 0.1	0.3	< 10	< 0.05	0.55	83.9	0.25
E832467	0.005	1	5.5	1.89	4.92	4.53	0.06	7.78	0.2	181	299	1690	8.99	1.2	151	1.6	0.4	0.5	< 10	< 0.05	0.19	51.6	0.56
E832468	0.015	1	2.9	0.30	3.10	1.85	0.13	2.58	< 0.1	63	53.0	3370	21.1	1.0	36.8	2.7	0.7	0.8	< 10	< 0.05	1.37	23.9	0.80
E832469	< 0.005	2	12.2	0.30	1.91	2.59	0.34	2.68	< 0.1	81	149	625	3.39	0.6	43.5	0.7	0.2	0.2	< 10	< 0.05	0.98	18.1	0.20
E832470	> 10.0	1	15.2	0.13	1.24	1.72	0.28	1.81	< 0.1	26	42.9	566	19.8	0.6	23.0	0.8	0.6	0.2	60	3.26	6.89	7.8	0.37
E832471	0.009	< 1	7.9	1.28	5.52	3.45	0.09	6.66	0.2	182	393	1580	9.23	0.9	153	1.3	0.2	0.4	< 10	< 0.05	0.25	49.6	0.43
E832472	< 0.005	< 1	4.8	0.60	7.40	2.58	0.03	8.30	0.1	137	914	1730	8.21	0.7	459	1.0	0.2	0.3	< 10	< 0.05	0.29	70.8	0.37
E832473	0.806	5	1.7	0.42	1.00	0.72	< 0.01	1.60	0.1	25	167	358	1.79	0.1	25.4	0.2	< 0.1	< 0.1	< 10	0.06	0.10	7.4	0.12
E832474	0.011	20	48.8	0.37	4.38	6.65	0.85	6.75	< 0.1	273	84.4	2080	8.92	1.0	92.6	1.6	0.3	0.5	< 10	< 0.05	1.50	49.8	0.50
E832475	< 0.005	1	8.4	0.40	10.4	2.66	0.04	4.71	0.1	144	2450	1700	10.5	0.6	683	0.9	0.1	0.3	< 10	< 0.05	0.67	94.1	0.35
E832476	< 0.005	1	34.6	0.27	1.00	3.28	0.24	2.51	< 0.1	69	1470	1120	3.96	1.1	171	1.4	0.3	0.4	< 10	< 0.05	2.34	31.1	0.53
E832477	0.005	1	6.5	0.43	0.75	2.09	0.78	0.84	< 0.1	44	297	345	11.8	2.6	10.1	0.4	0.1	0.1	< 10	< 0.05	1.79	2.6	0.10
E832478	< 0.005	1	15.7	0.31	3.31	5.39	0.57	6.03	0.1	186	1070	1460	5.71	0.4	323	1.0	0.2	0.3	< 10	< 0.05	3.10	52.5	0.26
E832479	< 0.005	< 1	17.2	0.48	3.09	6.74	0.43	7.91	0.1	241	169	1960	7.22	0.8	101	2.5	0.2	0.8	< 10	< 0.05	4.00	41.7	0.76
E832480	< 0.005	1	21.3	2.36	0.31	6.87	4.67	1.13	< 0.1	30	28.7	327	2.24	9.4	4.6	1.1	1.1	0.4	< 10	< 0.05	1.30	4.5	0.69
E832481	0.008	< 1	22.0	1.55	2.95	6.37	0.87	7.91	0.1	249	171	1540	9.37	1.8	128	2.9	0.7	0.9	< 10	< 0.05	0.98	49.7	0.85
E832482	0.015	1	5.8	0.17	12.0	2.41	0.01	4.73	< 0.1	120	2410	1480	10.6	0.4	1170	0.6	< 0.1	0.2	< 10	< 0.05	0.20	117	0.18
E832483	0.005	24	9.3	0.28	3.85	5.54	0.51	8.64	0.1	193	867	2010	8.36	0.7	286	1.6	0.2	0.5	< 10	< 0.05	0.86	66.3	0.43
E832484	0.017	11	6.0	0.10	14.0	1.50	0.02	3.08	< 0.1	72	3480	1280	8.47	0.4	1500	0.6	< 0.1	0.2	< 10	< 0.05	0.36	111	0.17
E832485	0.049	3	8.0	1.96	3.25	6.70	0.41	6.77	0.3	164	240	1640	10.7	0.9	104	2.8	0.9	0.8	< 10	< 0.05	0.72	49.5	0.81
E832486	0.005	3	15.0	1.84	3.86	7.26	0.11	5.19	0.1	354	111	1860	12.6	2.6	98.8	3.4	0.5	1.0	< 10	< 0.05	0.15	53.6	1.06
E832487	0.005	2	6.5	0.86	7.65	3.19	0.05	7.70	0.1	135	1260	1550	9.75	0.8	491	1.1	0.2	0.4	< 10	< 0.05	0.79	74.4	0.44
E832488	0.007	2	8.5	0.94	7.83	3.49	0.05	8.61	0.2	173	908	2100	10.8	0.9	408	1.2	0.1	0.4	< 10	0.08	0.84	78.5	0.42
E832489	0.011	3	15.8	1.66	3.30	7.48	0.28	6.82	0.1	361	106	1970	10.9	2.2	99.9	3.7	0.6	1.1	< 10	< 0.05	0.39	52.5	0.92
E832490	3.18	2	38.5	0.34	1.07	7.27	3.16	3.01	1.3	206	21.1	1430	6.43	2.1	14.6	1.8	1.5	0.6	< 10	5.95	6.89	23.2	0.98
E832491	< 0.005	2	28.2	1.04	7.44	5.49	0.34	6.86	0.1	190	687	1610	8.59	1.0	287	1.3	0.2	0.4	< 10	< 0.05	2.56	59.0	0.34
E832492	< 0.005	16	9.8	0.48	9.50	2.90	0.06	7.88	0.2	133	2430	2050	10.8	0.8	788	1.0	< 0.1	0.3	< 10	< 0.05	1.33	103	0.32
E832493	< 0.005	10	14.0	1.67	5.64	3.38	0.38	7.47	0.2	180	579	1810	9.71	0.8	190	1.2	0.3	0.4	< 10	< 0.05	13.4	65.2	0.46
E832494	0.005	11	6.2	1.89	4.73	5.41	0.04	6.03	0.2	193	169	1480	10.9	1.5	49.4	2.1	0.8	0.7	< 10	0.10	0.12	25.1	0.62
E832495	< 0.005	3	8.1	2.10	2.77	6.67	0.15	5.80	0.2	185	67.7	1960	9.41	1.8	101	3.3	0.7	1.0	< 10	< 0.05	0.17	48.6	0.82
E832496	0.009	2	13.9	1.37	3.55	6.89	0.16	6.61	0.2	234	73.1	1820	11.1	1.9	130	3.1	0.3	1.0	< 10	< 0.05	0.30	57.1	0.85
E832497	0.005	3	6.1	1.81	5.06	4.54	0.06	8.16	< 0.1	182	392	1690	9.76	1.1	184	1.5	0.3	0.5	< 10	< 0.05	0.28	61.2	0.54
E832498	< 0.005	2	10.7	1.39	5.99	5.23	0.05	6.86	0.4	220	371	2040	13.1	1.4	183	1.9	0.3	0.6	< 10	< 0.05	0.17	70.6	0.74
E832499	< 0.005	2	< 0.5	0.04	1.25	0.25	0.02	1.72	0.4	4	13.7	2630	35.6	0.3	2.3	0.9	3.4	0.3	< 10	< 0.05	0.14	2.2	0.69
E832500	< 0.005	2	23.9	2.67	0.20	6.26	4.33	0.99	< 0.1	17	20.6	244	1.48	6.7	2.9	0.3	0.9	0.1	< 10	< 0.05	2.12	2.9	0.42
E835001	< 0.005	2	18.1	0.40	3.77	6.26	1.21	8.40	< 0.1	242	595	2470	8.25	1.0	228	1.9	0.2	0.6	< 10	< 0.05	2.05	63.9	0.54
E835002	< 0.005	14	10.5	1.48	2.92	5.56	0.13	5.18	0.2	291	111	1490	9.62	1.6	91.1	2.6	0.5	0.8	< 10	< 0.05	0.18	44.0	0.70
E835003	< 0.005	8	8.8	0.62	8.06	3.29	0.05	8.34	< 0.1	145	1360	1830	10.3	0.8	460	1.2	0.2	0.4	< 10	< 0.05	0.15	82.5	0.46
E835004	0.007	5	8.5	2.87	2.33	6.91	0.16	5.20	0.4	163	93.8	1610	8.25	1.1	105	3.4	0.6	1.0	< 10	< 0.05	0.28	48.6	0.97
E835005	< 0.005	3	3.5	0.11	13.0	1.79	0.03	3.24	< 0.1	88	2900	1600	9.49	0.3	1110	0.6	0.2	0.2	< 10	< 0.05	0.95	97.1	0.24
E835006	0.011	4	< 0.5	< 0.01	0.78	0.02	< 0.01	0.15	< 0.1	2	18.3	1760	10.9	< 0.1	4.5	0.4	0.3	0.1	< 10	< 0.05	< 0.05	1.3	0.26
E835007	< 0.005	2	23.8	1.19	0.79	5.93	2.00	0.94	< 0.1	6	17.0	225	1.21	2.2	6.5	0.4	0.9	0.1	< 10	< 0.05	1.42	2.0	0.32
E835008	< 0.005	2	7.8	2.21	2.78	6.60	0.16	5.55	0.2	216	75.5	1670	9.16	2.2	104	3.3	0.7	1.0	< 10	< 0.05	0.48	50.3	0.87

## Results

## Activation Laboratories Ltd.

## Report: A17-09168

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835009	< 0.005	2	7.5	0.87	7.08	3.44	0.12	7.33	0.1	172	678	1880	10.2	0.9	326	1.2	0.4	0.4	< 10	< 0.05	4.35	65.3	0.42
E835010	3.48	2	36.4	0.31	0.99	6.27	2.84	2.72	1.2	189	15.9	1310	5.96	1.9	13.6	1.7	1.5	0.5	< 10	6.43	6.33	21.4	0.90
E835011	< 0.005	2	7.3	1.00	5.82	3.56	0.04	8.06	< 0.1	173	560	1760	9.02	1.0	279	1.3	0.4	0.4	< 10	< 0.05	0.16	64.1	0.56
E835012	0.005	2	3.5	1.23	6.21	3.25	0.03	7.85	< 0.1	167	681	1700	8.77	0.8	285	1.1	0.2	0.4	< 10	< 0.05	0.18	65.4	0.51
E835013	< 0.005	16	11.0	1.69	3.00	5.99	0.20	5.86	0.2	253	106	1430	10.0	2.2	92.1	3.1	0.5	1.0	< 10	< 0.05	0.28	49.6	0.90
E835014	0.007	96	31.2	1.20	3.90	6.47	0.25	5.25	0.3	224	92.4	2120	10.9	2.3	98.9	3.1	0.4	0.9	< 10	< 0.05	0.36	49.8	0.90
E835015	< 0.005	6	4.1	1.22	4.19	3.30	0.04	5.59	0.2	141	561	1750	12.6	0.9	150	1.2	0.4	0.4	< 10	< 0.05	0.19	26.9	0.45
E835016	< 0.005	3	14.8	0.72	6.91	4.66	0.20	6.82	0.1	152	622	1570	7.42	0.9	323	1.2	0.4	0.4	< 10	< 0.05	0.45	51.3	0.32
E835017	< 0.005	2	17.1	1.69	3.22	6.49	0.55	6.11	0.2	257	71.9	1560	10.2	2.1	111	2.9	0.7	0.9	< 10	< 0.05	0.55	49.0	0.90
E835018	0.007	2	18.1	0.96	4.71	6.43	0.10	5.64	0.5	329	112	1960	14.1	2.6	76.1	3.0	0.6	0.9	< 10	0.16	0.21	42.0	0.69
E835019	2.48	3	21.2	1.19	3.71	6.54	0.82	6.40	0.2	252	136	1980	5.88	1.4	79.6	2.3	0.4	0.7	< 10	0.76	2.39	37.2	0.72
E835020	< 0.005	3	20.9	2.72	0.25	7.51	4.72	1.21	< 0.1	24	23.7	288	1.88	7.2	4.8	0.7	0.9	0.3	< 10	< 0.05	1.42	3.6	0.65
E835021	< 0.005	3	10.8	2.68	2.50	7.76	0.20	7.49	0.2	340	103	1720	9.38	2.0	113	3.4	0.6	1.1	< 10	< 0.05	0.17	57.1	1.09
E835022	< 0.005	3	13.7	1.91	5.23	5.97	0.07	6.72	< 0.1	176	388	1520	7.42	1.4	106	1.5	0.5	0.5	< 10	< 0.05	0.07	43.1	0.47
E835023	< 0.005	3	10.3	1.64	3.71	6.80	0.28	6.33	0.1	255	96.4	1710	10.4	1.8	104	3.0	0.4	0.9	< 10	< 0.05	0.23	45.9	0.74
E835024	0.015	3	9.5	2.84	3.82	7.40	0.07	5.43	< 0.1	319	181	1890	12.9	1.8	28.6	2.6	0.5	0.8	< 10	< 0.05	0.13	15.4	0.65
E835025	< 0.005	3	9.6	2.79	2.71	7.50	0.19	5.08	0.2	172	73.1	1710	9.12	1.4	105	3.7	0.8	1.1	< 10	< 0.05	0.28	51.9	0.85
E835026	0.006	2	13.1	1.75	3.85	6.72	0.12	6.02	0.1	303	85.1	1620	10.9	2.3	87.4	3.2	0.5	1.0	< 10	< 0.05	0.18	49.3	0.79
E835027	< 0.005	2	8.9	1.15	4.08	3.76	0.06	3.37	0.5	193	583	1280	10.6	1.0	95.3	0.9	0.3	0.3	< 10	0.09	0.32	30.5	0.26
E835028	< 0.005	2	10.8	1.76	3.60	6.81	0.15	6.83	0.1	277	78.0	1610	11.1	1.8	92.6	3.2	0.5	1.0	< 10	< 0.05	0.09	51.6	0.85
E835029	< 0.005	2	9.9	1.72	3.54	6.11	0.25	5.29	0.1	240	72.7	1250	9.49	2.0	84.3	3.1	0.8	0.9	< 10	< 0.05	0.76	45.2	0.78
E835030	7.19	4	9.2	2.26	1.47	8.00	1.50	3.79	0.2	170	23.2	1140	6.39	1.1	17.1	2.2	0.9	0.7	20	0.83	1.20	15.2	0.78
E835031	< 0.005	16	8.6	2.19	2.58	6.12	0.15	6.13	0.9	357	133	1750	8.05	2.4	115	3.1	1.1	0.9	< 10	< 0.05	0.25	55.4	0.85
E835032	< 0.005	16	16.6	2.30	4.97	7.02	0.15	4.62	< 0.1	265	102	1360	11.0	2.5	107	3.5	0.6	1.1	< 10	< 0.05	0.20	52.8	0.89
E835033	< 0.005	5	8.6	1.53	3.38	5.90	0.12	5.67	0.1	197	71.2	1400	9.12	1.5	114	2.6	0.4	0.8	< 10	< 0.05	0.18	44.9	0.70
E835034	< 0.005	3	8.0	1.43	2.67	5.90	0.13	6.05	< 0.1	212	73.7	1470	8.95	1.4	79.0	2.7	0.5	0.8	< 10	< 0.05	0.09	43.1	0.76
E835035	< 0.005	3	31.3	1.40	4.89	5.97	0.40	6.20	0.1	177	307	1490	7.59	1.6	125	1.5	0.4	0.5	< 10	< 0.05	0.50	44.8	0.50
E835036	< 0.005	2	12.9	0.30	5.35	5.73	0.52	7.01	0.1	203	261	2500	6.58	1.2	194	1.4	0.4	0.4	< 10	< 0.05	1.46	43.2	0.46
E835037	< 0.005	3	20.2	0.10	13.1	2.03	0.04	4.25	< 0.1	90	1210	1500	7.64	0.4	1220	0.6	0.1	0.2	< 10	< 0.05	1.48	88.2	0.16
E835038	< 0.005	2	6.1	1.11	5.65	4.01	0.06	6.57	0.2	188	391	1740	9.71	1.1	171	1.5	0.2	0.5	< 10	< 0.05	0.14	51.0	0.55
E835039	< 0.005	3	29.7	1.52	0.64	8.44	2.18	2.98	< 0.1	100	65.8	892	3.69	3.5	52.1	1.3	0.8	0.4	< 10	< 0.05	1.71	16.2	0.70
E835040	< 0.005	3	24.2	> 3.00	0.26	8.09	4.35	1.28	< 0.1	22	19.1	300	1.93	7.7	3.6	0.7	1.2	0.3	< 10	< 0.05	1.85	4.0	0.61
E835041	0.020	20	23.4	2.23	0.42	5.74	1.26	1.61	< 0.1	26	30.5	288	1.80	5.0	14.8	0.3	1.0	0.1	< 10	< 0.05	1.42	5.2	0.26
E835042	< 0.005	17	25.2	1.75	3.63	6.79	0.39	5.38	0.1	201	100	1890	8.60	1.9	108	3.2	0.4	1.0	< 10	< 0.05	0.53	51.2	0.85
E835043	< 0.005	11	7.0	2.30	2.42	6.86	0.32	6.15	0.4	169	94.7	1860	8.29	1.0	103	3.0	0.5	0.9	< 10	< 0.05	0.22	51.0	0.88
E835044	< 0.005	4	81.8	1.43	3.97	7.05	0.50	5.78	0.3	238	196	2290	12.4	2.2	126	3.5	0.5	1.1	< 10	< 0.05	0.64	49.1	0.82
E835045	< 0.005	3	0.7	0.05	1.34	0.34	0.02	2.39	0.1	16	50.8	1300	31.9	< 0.1	12.5	0.6	2.3	0.2	< 10	< 0.05	0.07	3.0	0.52
E835046	< 0.005	3	23.0	1.53	5.81	6.43	0.26	6.45	< 0.1	179	218	1360	7.22	0.6	169	1.4	0.1	0.4	< 10	< 0.05	0.59	46.7	0.37
E835047	< 0.005	2	38.7	0.11	2.83	5.83	0.18	10.3	0.1	210	62.8	1280	7.35	1.7	79.1	2.9	0.8	0.9	< 10	< 0.05	0.32	47.0	1.08
E835048	0.030	2	5.6	1.04	4.91	3.57	0.07	2.85	0.3	181	1200	1780	12.1	2.7	81.3	2.1	0.5	0.7	< 10	0.08	0.07	41.1	0.66
E835049	< 0.005	2	13.7	1.05	7.68	4.90	0.08	6.32	< 0.1	165	693	1570	7.86	0.8	361	1.2	0.2	0.4	< 10	< 0.05	0.27	59.3	0.39
E835050	0.544	3	12.7	1.90	4.14	7.43	1.04	5.05	0.2	122	221	1260	5.25	1.2	220	2.0	0.8	0.6	< 10	0.68	1.09	31.8	0.60
E835051	0.006	2	12.3	2.18	2.44	7.13	0.35	5.99	0.1	241	103	2040	8.88	1.8	109	3.4	0.5	1.1	< 10	< 0.05	0.29	52.4	0.92

Results

Activation Laboratories Ltd.

Report: A17-09168

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
E835052	0.061	19	22.8	0.47	4.17	5.37	1.10	5.71	< 0.1	168	575	1380	6.32	1.8	159	1.8	0.3	0.5	< 10	< 0.05	3.35	43.1	0.68	
E835053	< 0.005	112	39.2	1.22	1.47	7.32	1.27	2.89	< 0.1	109	89.7	859	4.73	3.1	63.5	1.1	1.0	0.3	< 10	< 0.05	5.68	22.7	0.52	
E835054	0.006	14	16.7	0.98	6.78	3.58	0.20	7.39	0.1	179	653	1990	9.95	1.0	224	1.4	0.3	0.5	< 10	< 0.05	0.32	64.5	0.50	
E835055	0.011	8	4.2	0.42	4.04	2.07	0.08	3.70	0.2	80	1140	976	11.8	0.7	196	0.8	0.3	0.2	< 10	0.15	0.25	48.2	0.34	
E835056	0.008	3	7.3	2.40	4.21	5.69	0.08	5.94	0.1	185	279	1550	10.3	1.5	139	1.8	0.6	0.6	< 10	< 0.05	0.35	43.1	0.53	
E835057	0.006	2	15.8	0.77	3.90	6.76	0.29	7.55	0.2	209	47.3	1650	9.02	1.1	51.9	2.3	0.3	0.7	< 10	< 0.05	0.57	41.5	0.65	
E835058	< 0.005	2	3.0	1.46	5.34	3.45	0.04	8.08	0.2	179	223	1930	8.81	0.9	188	1.3	0.3	0.4	< 10	< 0.05	0.32	61.4	0.48	
E835059	< 0.005	2	5.9	0.59	7.29	2.91	0.03	7.78	0.1	151	714	1690	9.26	0.7	391	1.1	0.2	0.4	< 10	< 0.05	0.33	72.5	0.42	
E835060	< 0.005	3	24.0	2.64	0.32	7.07	3.87	1.14	< 0.1	27	17.6	339	2.26	3.4	5.0	0.9	1.1	0.4	< 10	< 0.05	1.36	4.4	0.68	
E835061	0.005	2	19.4	1.76	3.10	6.84	0.30	5.47	0.2	209	82.3	1700	8.96	2.3	102	3.3	0.5	1.0	< 10	< 0.05	0.43	50.6	0.90	
E835062	< 0.005	6	5.6	1.25	7.48	3.46	0.08	7.54	0.2	145	1160	1790	9.37	0.8	353	1.2	0.4	0.4	< 10	< 0.05	2.11	65.5	0.49	
E835063	< 0.005	1	8.5	2.48	3.82	7.07	0.11	5.80	0.1	177	84.5	1770	8.06	1.8	84.8	3.5	0.6	1.0	< 10	< 0.05	0.11	46.3	0.83	
E835064	< 0.005	1	30.2	1.72	3.85	7.27	0.58	5.76	0.2	202	198	1760	8.03	1.2	87.4	1.8	0.3	0.5	< 10	< 0.05	2.97	44.7	0.47	
E835065	< 0.005	1	29.2	1.45	4.70	4.79	0.10	6.20	0.2	212	19.2	1830	10.7	1.3	119	1.9	0.4	0.6	< 10	< 0.05	1.12	64.0	0.62	
E835066	< 0.005	1	5.4	1.42	6.49	3.91	0.05	7.65	0.2	176	550	1750	9.99	1.0	222	1.3	0.3	0.4	< 10	< 0.05	0.10	68.2	0.61	
E835067	1.40	3	< 0.5	0.02	0.71	0.09	< 0.01	0.10	< 0.1	4	26.9	1500	11.9	< 0.1	4.9	0.3	0.1	< 0.1	< 10	0.18	0.09	1.4	0.13	
E835068	< 0.005	1	17.9	1.90	4.28	7.58	0.12	7.16	< 0.1	263	76.1	1760	11.0	1.9	175	2.9	0.5	0.8	< 10	< 0.05	0.07	58.3	0.81	
E835069	< 0.005	1	8.6	1.66	3.22	6.55	0.18	6.23	0.1	233	73.4	1670	10.3	1.8	101	3.0	0.4	0.9	< 10	< 0.05	0.13	50.0	0.80	
E835070	> 10.0	24	16.4	0.14	1.38	1.88	0.31	2.02	< 0.1	27	48.4	608	22.1	0.6	27.0	0.8	0.6	0.2	< 10	5.78	7.61	9.1	0.39	
E835071	0.005	18	19.0	1.79	4.00	7.16	0.40	6.11	0.1	229	101	1760	9.75	1.5	138	2.1	0.5	0.6	< 10	< 0.05	0.64	55.8	0.59	
E835072	< 0.005	9	8.7	2.48	2.56	7.34	0.12	5.55	0.1	234	96.7	1690	9.07	2.1	110	3.4	0.5	1.0	< 10	< 0.05	0.12	55.0	0.96	
E835073	< 0.005	3	21.1	0.51	1.88	3.70	1.52	2.52	< 0.1	45	62.5	1190	4.76	2.1	16.2	0.8	0.2	0.2	< 10	< 0.05	3.07	5.4	0.28	
E835074	0.005	1	4.1	0.92	6.95	3.30	0.04	9.64	0.2	150	617	1980	9.34	0.9	225	1.3	0.3	0.4	< 10	< 0.05	0.12	57.9	0.45	
E835075	< 0.005	< 1	10.1	1.93	2.76	6.51	0.24	5.12	< 0.1	296	16.7	1870	12.5	3.2	7.6	4.4	0.7	1.2	< 10	< 0.05	0.46	22.6	0.91	
E835076	< 0.005	< 1	11.4	1.60	3.17	6.43	0.12	6.42	0.1	236	78.6	1480	10.6	2.0	81.9	3.2	0.6	0.9	< 10	< 0.05	0.06	43.9	0.81	
GXR-1 Meas		17	7.1	0.04	0.19	1.59	0.04	0.82	2.3	75	18.0	853	22.9	0.4	43.7		0.8		3410	30.4	2.10	7.5	0.49	
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	
GXR-1 Meas		< 1	7.5	0.04	0.20	1.90	0.04	0.89	2.5	83	17.6	898	23.9	0.5	43.2		0.9		2000	32.3	2.31	7.6	0.56	
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas		1	11.2	0.53	1.73	6.36	4.09	0.98	0.2	90	42.8	175	3.15	1.2	44.7		2.0		10	3.68	2.34	15.2	1.26	
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	
GXR-4 Meas		1	10.6	0.52	1.63	5.88	4.24	0.98	0.3	90	51.8	172	3.00	1.2	42.0		1.9		< 10	3.49	2.21	13.9	1.28	
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	
SDC-1 Meas		< 1	34.9	1.41	0.78	7.57	1.68	0.91		49	46.1	870	4.55	1.0	34.4	3.4	2.8	1.1	< 10		3.31	16.9	1.29	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas		15	36.0	1.54	0.82	7.86	2.74	0.98		45	45.7	904	4.89	1.0	38.1	3.5	2.9	1.1	< 10		3.43	18.7	1.34	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
SDC-1 Meas		27	34.8	1.49	1.00	7.48	1.61	0.98		66	64.4	899	4.71	1.2	38.7	3.6	2.8	1.1	< 10		3.32	17.8	1.33
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		26	32.9	0.09	0.57	> 10.0	1.56	0.14	< 0.1	146	66.9	1030	5.33	2.5	24.7			50	0.19	3.36	13.1	0.55	
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
GXR-6 Meas		2	34.7	0.09	0.60	> 10.0	1.94	0.15	0.1	135	67.4	1120	5.83	2.3	26.9		1.1		20	0.20	3.82	14.3	0.58
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
GXR-6 Meas		< 1	33.8	0.10	0.59	> 10.0	1.96	0.16	< 0.1	113	53.6	1080	5.69	1.7	26.2		1.0		30	0.23	3.70	13.8	0.62
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.6							146	197				275							55.4	0.51
DNC-1a Cert			5.2							148	270				247							57	0.59
DNC-1a Meas			4.8							154	155				261							60.1	0.53
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas			162						0.4	206	95.6			3.0	87.3	3.4	3.1	1.1			6.75	22.1	1.65
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
SBC-1 Meas			168						0.4	218	95.6			3.5	88.9	3.6	3.4	1.1			7.16	22.8	1.70
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
SBC-1 Meas			156						0.3	208	77.7			3.2	90.7	3.6	3.1	1.1			6.86	22.0	1.70
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			21.3	0.09	0.23	7.27	0.42	0.16		98	504	508	14.3	1.9	251	1.4	0.7	0.4			3.25	30.9	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			21.1	0.09	0.24	7.37	0.43	0.18		113	531	522	14.6	2.2	255	1.3	0.8	0.4			3.32	31.4	0.53
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			20.4	0.09	0.23	7.19	0.42	0.18		165	528	509	14.1	3.3	248	1.4	0.7	0.4			3.20	28.5	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			18.3						6.0	23	57.5			2.2	52.5	2.8	6.8	0.9	1260		1.45	13.3	1.18
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			18.3						5.6	22	38.8			3.5	52.9	2.8	7.0	0.9	800		1.51	14.1	1.18
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 214 Meas																							
OREAS 214 Cert																							
OREAS 216 (Fire Assay) Meas																							
OREAS 216 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas	1.78																						

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 223 (Fire Assay) Meas	1.80																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 223 (Fire Assay) Meas	1.78																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 223 (Fire Assay) Meas	1.74																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 218 Meas	0.534																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.533																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.521																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.545																						
OREAS 218 Cert	0.531																						
OREAS 220 (Fire Assay) Meas	0.868																						
OREAS 220 (Fire Assay) Cert	0.828																						
E832474 Orig		20	48.8	0.37	4.38	6.65	0.85	6.75	< 0.1	273	84.4	2080	8.92	1.0	92.6	1.6	0.3	0.5	< 10	< 0.05	1.50	49.8	0.50
E832474 Dup		16	49.0	0.35	4.42	7.02	0.92	7.02	< 0.1	262	78.7	2090	9.36	1.0	96.8	1.7	0.2	0.5	< 10	< 0.05	1.69	53.3	0.52
E832475 Orig	< 0.005																						
E832475 Dup	< 0.005																						
E832485 Orig	0.049																						
E832485 Dup	0.050																						
E832492 Orig		16	9.8	0.48	9.50	2.90	0.06	7.88	0.2	133	2430	2050	10.8	0.8	788	1.0	< 0.1	0.3	< 10	< 0.05	1.33	103	0.32
E832492 Dup		16	10.7	0.52	10.1	3.18	0.06	8.40	0.2	130	2600	2140	11.6	0.8	846	1.1	< 0.1	0.4	< 10	< 0.05	1.46	110	0.36
E832495 Orig	< 0.005																						
E832495 Dup	< 0.005																						
E835011 Orig	< 0.005																						
E835011 Dup	< 0.005																						
E835012 Orig		2	3.5	1.23	6.21	3.25	0.03	7.85	< 0.1	167	681	1700	8.77	0.8	285	1.1	0.2	0.4	< 10	< 0.05	0.18	65.4	0.51
E835012 Dup		14	3.6	1.29	6.51	3.41	0.03	8.15	< 0.1	171	1100	1790	9.16	0.9	304	1.2	0.2	0.4	< 10	< 0.05	0.20	67.8	0.55
E835015 Orig	< 0.005	6	4.1	1.22	4.19	3.30	0.04	5.59	0.2	141	561	1750	12.6	0.9	150	1.2	0.4	0.4	< 10	< 0.05	0.19	26.9	0.45
E835015 Split	< 0.005	1	4.6	1.34	4.72	3.67	0.05	6.18	0.2	170	535	2020	13.8	1.1	170	1.3	0.4	0.4	< 10	< 0.05	0.24	30.9	0.50
E835020 Orig	< 0.005																						
E835020 Dup	< 0.005																						
E835031 Orig	< 0.005																						

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835031 Dup	< 0.005																						
E835039 Orig		3	29.7	1.52	0.64	8.44	2.18	2.98	< 0.1	100	65.8	892	3.69	3.5	52.1	1.3	0.8	0.4	< 10	< 0.05	1.71	16.2	0.70
E835039 Dup		3	29.0	1.48	0.62	8.16	2.07	2.89	< 0.1	95	64.7	873	3.54	3.4	50.1	1.3	0.8	0.4	< 10	< 0.05	1.66	15.6	0.67
E835044 Orig	< 0.005																						
E835044 Dup	< 0.005																						
E835054 Orig	0.006																						
E835054 Dup	0.005																						
E835064 Orig	< 0.005																						
E835064 Dup	< 0.005																						
E835065 Orig	< 0.005	1	29.2	1.45	4.70	4.79	0.10	6.20	0.2	212	19.2	1830	10.7	1.3	119	1.9	0.4	0.6	< 10	< 0.05	1.12	64.0	0.62
E835065 Split	< 0.005	2	30.3	1.47	4.49	4.68	0.09	6.12	0.2	228	21.9	1920	10.7	1.3	114	1.8	0.5	0.6	< 10	< 0.05	1.13	64.7	0.62
E835069 Orig		1	8.6	1.66	3.22	6.55	0.18	6.23	0.1	233	73.4	1670	10.3	1.8	101	3.0	0.4	0.9	< 10	< 0.05	0.13	50.0	0.80
E835069 Dup		4	8.9	1.71	3.36	6.84	0.19	6.54	0.2	267	90.4	1680	10.8	1.9	108	3.1	0.5	0.9	< 10	< 0.05	0.16	52.8	0.84
E835075 Orig	< 0.005																						
E835075 Dup	< 0.005																						
Method Blank		18	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.3	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832466	< 0.02	< 0.1	78.6	6.7	12.7	1.2	7.0	17	0.6	0.20	< 0.1	< 1	0.7	< 0.1	8	1.0	3.0	0.5	2.4	0.8	1.0	0.2	1.4
E832467	< 0.02	< 0.1	75.8	11.7	6.5	1.2	14.0	50	0.2	0.08	< 0.1	< 1	0.2	< 0.1	67	3.2	8.4	1.3	5.9	1.6	2.1	0.4	2.7
E832468	0.06	0.3	112	4.4	1.0	5.2	22.6	49	2.6	1.67	0.1	< 1	1.8	< 0.1	453	4.9	13.5	1.7	7.3	2.2	2.7	0.5	4.1
E832469	0.02	< 0.1	30.1	4.9	< 0.1	13.9	5.6	25	0.7	1.94	< 0.1	< 1	0.3	< 0.1	96	2.6	5.8	0.7	3.0	0.7	0.8	0.1	1.0
E832470	1.47	0.8	32.0	6.5	8090	17.6	7.8	35	1.7	4.44	< 0.1	5	2.9	0.5	41	6.3	14.2	1.7	6.5	1.1	1.1	0.2	1.2
E832471	0.18	< 0.1	79.9	10.9	6.8	1.5	11.3	37	0.7	0.17	< 0.1	< 1	0.1	< 0.1	54	0.9	3.3	0.6	3.5	1.3	1.7	0.3	2.2
E832472	< 0.02	< 0.1	81.7	7.8	34.6	0.6	8.7	26	0.8	0.28	< 0.1	< 1	0.8	< 0.1	9	1.3	4.0	0.6	3.4	1.1	1.4	0.2	1.7
E832473	2.91	< 0.1	16.6	1.7	8.9	0.4	2.1	5	0.3	3.64	< 0.1	< 1	0.3	0.3	12	0.6	1.5	0.2	1.0	0.3	0.4	< 0.1	0.4
E832474	0.03	< 0.1	80.3	15.7	0.3	18.4	13.0	40	1.8	0.62	< 0.1	< 1	0.3	< 0.1	73	1.8	5.0	0.7	3.9	1.2	1.7	0.3	2.4
E832475	0.03	0.1	105	8.7	< 0.1	1.3	8.3	21	0.5	0.21	< 0.1	< 1	0.7	< 0.1	27	1.1	3.7	0.6	3.2	1.0	1.2	0.2	1.6
E832476	0.36	< 0.1	65.1	10.3	2.1	10.5	12.9	44	2.3	1.61	< 0.1	1	< 0.1	< 0.1	24	6.2	14.6	1.7	6.5	1.4	1.6	0.3	2.2
E832477	1.11	0.7	40.1	7.4	1.0	20.2	3.1	121	3.3	8.33	< 0.1	< 1	< 0.1	< 0.1	71	2.1	4.3	0.4	1.8	0.3	0.4	< 0.1	0.5
E832478	0.28	0.3	76.5	11.1	0.4	20.3	8.2	15	0.7	0.86	< 0.1	< 1	0.1	< 0.1	50	1.4	3.6	0.5	2.5	0.7	1.0	0.2	1.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832479	0.21	< 0.1	81.4	17.5	0.8	11.5	21.2	25	0.7	0.37	< 0.1	< 1	< 0.1	< 0.1	31	3.7	10.0	1.6	7.6	2.3	2.9	0.5	3.9
E832480	0.02	< 0.1	55.4	11.4	< 0.1	162	10.7	383	9.5	1.59	< 0.1	< 1	< 0.1	< 0.1	940	69.5	158	16.8	59.0	7.5	4.8	0.4	2.4
E832481	0.12	< 0.1	94.0	15.0	5.3	29.7	26.3	78	0.6	0.16	< 0.1	< 1	< 0.1	< 0.1	249	6.8	16.7	2.2	10.2	2.7	3.4	0.6	4.4
E832482	0.28	0.4	88.4	8.5	740	0.3	5.0	18	0.8	0.23	< 0.1	< 1	8.4	< 0.1	4	0.8	2.6	0.4	2.1	0.6	0.8	0.1	1.0
E832483	0.11	< 0.1	83.9	12.8	41.8	12.6	13.5	32	0.6	0.23	< 0.1	< 1	0.2	< 0.1	74	2.1	5.8	0.9	4.3	1.3	1.8	0.3	2.4
E832484	0.04	0.3	74.9	6.8	124	0.6	5.5	16	0.3	0.20	< 0.1	< 1	1.4	< 0.1	8	1.1	2.7	0.4	1.9	0.6	0.8	0.1	1.0
E832485	0.18	0.1	203	17.8	32.2	8.2	24.1	36	0.2	0.09	< 0.1	< 1	< 0.1	< 0.1	126	5.3	14.4	2.0	9.3	2.5	3.0	0.5	4.1
E832486	0.03	< 0.1	128	22.7	< 0.1	1.8	30.1	108	0.9	0.22	< 0.1	< 1	0.1	< 0.1	35	5.1	14.2	2.0	9.9	2.9	3.5	0.6	5.1
E832487	< 0.02	< 0.1	102	9.5	13.1	1.9	10.2	30	0.2	0.16	< 0.1	< 1	1.0	< 0.1	26	1.5	4.7	0.8	3.9	1.3	1.7	0.3	2.0
E832488	0.54	< 0.1	108	11.3	20.8	1.2	10.7	34	0.7	0.20	< 0.1	< 1	0.6	< 0.1	26	2.1	5.9	0.9	4.6	1.3	1.6	0.3	2.1
E832489	0.04	< 0.1	123	21.8	1.4	5.5	32.9	93	2.0	0.19	0.1	< 1	0.2	< 0.1	106	5.0	13.4	1.9	9.2	2.8	4.0	0.7	5.7
E832490	0.50	15.7	143	< 0.1	1520	112	16.2	88	7.4	3.49	< 0.1	2	25.6	< 0.1	1430	19.4	41.8	5.2	21.2	4.1	3.5	0.5	3.1
E832491	0.04	< 0.1	78.6	12.9	9.3	12.0	11.6	37	1.7	0.64	< 0.1	< 1	2.0	< 0.1	51	2.8	7.0	0.9	4.0	1.1	1.4	0.2	2.0
E832492	0.03	0.2	108	9.4	60.3	2.0	8.8	29	1.3	0.79	< 0.1	< 1	6.2	< 0.1	28	1.9	5.3	0.8	4.0	1.2	1.4	0.2	1.8
E832493	< 0.02	< 0.1	82.2	8.9	10.5	19.6	10.6	31	0.1	< 0.05	< 0.1	< 1	0.2	< 0.1	152	2.1	6.0	0.9	4.5	1.3	1.6	0.3	2.1
E832494	0.22	0.6	75.6	13.7	0.1	0.8	17.9	59	0.2	0.11	< 0.1	< 1	0.2	< 0.1	33	3.4	8.4	1.2	5.5	1.7	2.3	0.4	3.4
E832495	< 0.02	< 0.1	118	16.7	< 0.1	2.3	28.4	71	0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	57	5.2	14.1	2.0	9.5	2.7	3.7	0.6	5.0
E832496	0.04	< 0.1	123	18.9	0.3	2.2	27.5	79	0.4	0.23	< 0.1	< 1	0.1	< 0.1	52	6.4	16.7	2.3	11.1	3.0	3.9	0.6	4.9
E832497	0.02	< 0.1	94.3	11.2	7.7	1.4	13.6	46	0.4	0.13	< 0.1	< 1	0.4	< 0.1	40	3.3	9.0	1.3	6.5	1.8	2.2	0.3	2.7
E832498	0.03	< 0.1	149	15.7	0.6	0.7	17.7	55	0.6	0.14	< 0.1	< 1	0.2	< 0.1	20	3.2	9.6	1.4	7.0	2.2	2.7	0.4	3.3
E832499	0.32	< 0.1	46.4	1.0	1.5	0.6	9.0	17	0.7	0.44	< 0.1	< 1	1.5	0.1	11	3.7	7.9	0.9	3.7	0.7	1.0	0.2	1.3
E832500	0.03	< 0.1	44.5	9.4	< 0.1	123	4.1	269	4.4	1.09	< 0.1	< 1	< 0.1	< 0.1	798	50.9	107	10.4	33.1	4.6	2.6	0.2	1.1
E835001	0.24	< 0.1	67.1	13.1	1.2	29.8	16.7	38	2.0	0.67	< 0.1	< 1	0.1	< 0.1	105	2.9	7.8	1.1	5.7	1.6	2.2	0.4	2.9
E835002	0.02	< 0.1	103	17.1	0.4	0.7	21.3	73	4.4	0.55	< 0.1	< 1	0.7	< 0.1	25	4.1	11.1	1.6	7.7	2.2	3.0	0.5	4.0
E835003	0.02	< 0.1	103	10.5	2.3	0.5	11.0	32	< 0.1	0.11	< 0.1	< 1	0.1	< 0.1	10	2.6	6.7	1.0	5.1	1.5	1.8	0.3	2.2
E835004	< 0.02	< 0.1	161	18.4	< 0.1	4.0	30.0	43	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	182	4.9	13.0	1.8	8.9	2.7	3.8	0.6	5.3
E835005	0.07	0.2	94.6	5.8	3.3	1.3	5.0	12	0.7	0.20	< 0.1	< 1	0.6	< 0.1	30	0.9	2.7	0.4	2.1	0.7	0.8	0.1	1.0
E835006	0.02	< 0.1	11.4	0.4	13.8	< 0.2	3.8	2	< 0.1	0.44	< 0.1	< 1	1.1	< 0.1	2	2.1	4.0	0.5	1.8	0.3	0.4	< 0.1	0.5
E835007	0.13	< 0.1	37.2	13.7	1.0	51.3	3.5	88	3.7	1.35	< 0.1	< 1	0.5	< 0.1	209	13.1	24.9	2.4	8.1	1.1	0.8	0.1	0.7
E835008	0.08	< 0.1	119	17.5	< 0.1	3.4	28.4	90	0.4	0.06	< 0.1	< 1	< 0.1	< 0.1	97	5.1	13.5	1.9	9.1	2.7	3.6	0.6	5.0
E835009	0.04	< 0.1	94.9	8.4	14.4	4.8	10.6	34	0.8	0.16	< 0.1	< 1	0.7	< 0.1	151	1.5	4.5	0.7	3.6	1.2	1.6	0.3	2.1
E835010	0.50	14.2	134	9.5	1470	97.0	14.5	82	6.8	3.45	< 0.1	2	24.6	< 0.1	576	14.1	34.9	4.4	19.1	3.6	3.1	0.4	2.9
E835011	0.03	< 0.1	88.8	11.0	3.8	1.0	11.3	40	0.7	0.22	< 0.1	< 1	0.2	< 0.1	23	2.8	7.6	1.1	5.3	1.5	1.8	0.3	2.2
E835012	< 0.02	< 0.1	82.4	9.2	2.9	0.9	10.1	34	1.1	0.19	< 0.1	< 1	0.8	< 0.1	16	1.7	4.9	0.8	4.0	1.2	1.6	0.3	2.0
E835013	0.03	< 0.1	107	17.4	1.0	3.8	26.5	91	0.2	< 0.05	< 0.1	< 1	< 0.1	< 0.1	107	5.9	16.1	2.2	10.5	2.9	3.6	0.6	4.8
E835014	< 0.02	< 0.1	190	20.6	< 0.1	7.3	27.2	97	0.2	< 0.05	< 0.1	< 1	< 0.1	< 0.1	104	5.6	14.9	2.1	9.7	2.7	3.5	0.6	4.7
E835015	0.06	< 0.1	107	9.0	11.3	0.9	10.2	39	0.2	0.25	< 0.1	< 1	0.3	< 0.1	52	2.0	4.6	0.6	3.4	1.2	1.5	0.3	2.0
E835016	0.03	< 0.1	62.3	10.0	22.2	6.7	10.6	36	0.8	0.16	< 0.1	< 1	0.8	< 0.1	71	2.2	5.5	0.7	3.5	0.9	1.4	0.2	1.9
E835017	< 0.02	< 0.1	108	14.6	0.9	20.4	26.0	85	0.2	0.11	< 0.1	< 1	0.2	< 0.1	326	5.3	13.9	1.9	9.4	2.7	3.2	0.6	4.6
E835018	0.10	0.1	135	22.9	0.5	2.4	25.7	111	2.2	1.05	0.1	< 1	0.2	< 0.1	29	5.2	11.7	1.5	7.1	2.2	2.8	0.5	4.5
E835019	0.12	< 0.1	79.7	16.5	1570	26.1	20.8	60	0.3	0.35	< 0.1	< 1	0.2	< 0.1	98	4.6	11.8	1.7	7.9	2.0	2.6	0.4	3.5
E835020	< 0.02	< 0.1	46.5	11.4	< 0.1	148	7.8	300	7.8	1.35	< 0.1	< 1	< 0.1	< 0.1	924	70.6	150	15.9	55.0	7.1	4.2	0.4	2.1
E835021	< 0.02	< 0.1	90.3	27.2	0.9	2.5	31.7	86	2.4	0.32	< 0.1	< 1	< 0.1	< 0.1	180	7.9	19.5	2.7	12.8	3.3	4.1	0.7	5.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835022	0.04	< 0.1	64.1	14.0	< 0.1	0.8	13.7	60	0.6	0.25	< 0.1	< 1	0.3	< 0.1	35	2.0	5.1	0.7	4.0	1.4	1.9	0.3	2.5
E835023	< 0.02	< 0.1	107	18.3	0.2	5.3	26.0	74	0.3	0.06	< 0.1	< 1	0.1	< 0.1	88	2.3	6.6	1.0	5.6	2.2	3.2	0.6	4.5
E835024	0.19	0.9	64.4	20.0	0.8	0.8	24.0	73	2.2	0.96	< 0.1	< 1	0.5	< 0.1	83	1.8	4.9	0.8	4.9	1.9	2.7	0.5	4.0
E835025	0.02	< 0.1	145	17.5	0.2	5.0	32.3	57	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	80	3.3	10.0	1.3	6.5	2.6	3.8	0.7	5.7
E835026	0.02	< 0.1	111	19.2	< 0.1	1.1	27.3	96	1.1	0.19	< 0.1	< 1	0.1	< 0.1	38	3.4	9.7	1.4	7.2	2.3	3.2	0.6	4.7
E835027	0.09	0.8	154	12.5	1.4	1.4	7.0	40	1.5	0.93	< 0.1	< 1	1.7	< 0.1	29	1.4	3.8	0.6	2.8	0.8	1.0	0.2	1.5
E835028	0.02	< 0.1	114	20.6	< 0.1	0.7	28.0	73	0.5	0.22	< 0.1	< 1	0.1	< 0.1	33	5.4	15.5	2.1	10.2	3.0	3.5	0.6	5.0
E835029	0.02	< 0.1	68.4	17.0	< 0.1	8.9	26.7	89	1.2	0.20	< 0.1	< 1	< 0.1	< 0.1	119	4.3	11.5	1.8	8.4	2.6	3.3	0.6	4.7
E835030	0.63	< 0.1	98.8	9.3	15.4	39.4	20.4	28	3.6	10.1	< 0.1	2	5.3	0.1	658	13.7	32.1	4.2	17.6	3.6	3.3	0.5	3.6
E835031	0.03	< 0.1	121	18.5	4.5	1.0	24.5	103	4.6	0.51	< 0.1	1	0.3	< 0.1	109	5.1	14.4	2.0	9.7	2.6	3.5	0.6	4.7
E835032	0.02	< 0.1	95.1	20.8	< 0.1	3.8	30.8	107	0.3	0.06	< 0.1	< 1	< 0.1	< 0.1	41	2.0	7.9	1.0	6.3	2.7	3.8	0.7	5.3
E835033	0.03	< 0.1	91.5	17.0	< 0.1	1.6	23.1	63	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	19	1.9	5.9	0.9	5.0	1.9	2.7	0.5	4.0
E835034	0.02	< 0.1	111	17.2	< 0.1	1.0	23.8	60	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	29	4.9	13.0	1.8	8.8	2.5	3.1	0.5	4.3
E835035	0.04	< 0.1	69.9	11.0	1.3	13.0	13.7	62	0.6	0.20	< 0.1	< 1	0.3	< 0.1	189	5.0	12.3	1.5	6.2	1.6	1.9	0.3	2.5
E835036	0.04	< 0.1	67.6	12.8	18.6	14.3	12.4	51	1.8	0.26	< 0.1	< 1	0.4	< 0.1	37	3.2	7.9	1.0	4.7	1.2	1.5	0.3	2.2
E835037	0.05	< 0.1	66.1	6.4	560	1.6	5.2	14	0.5	0.15	< 0.1	< 1	2.5	< 0.1	19	1.1	2.9	0.4	2.1	0.6	0.8	0.1	1.0
E835038	0.03	< 0.1	104	11.1	0.9	1.2	13.3	41	0.7	0.13	< 0.1	< 1	0.3	< 0.1	90	1.4	4.7	0.8	4.5	1.5	2.0	0.3	2.6
E835039	0.06	< 0.1	56.4	17.6	7.3	57.8	12.5	158	3.5	0.29	< 0.1	1	0.4	< 0.1	312	15.8	39.0	4.1	15.5	2.8	2.8	0.4	2.5
E835040	0.03	< 0.1	49.1	14.0	< 0.1	135	7.9	313	6.7	0.84	< 0.1	1	< 0.1	< 0.1	923	63.3	135	13.8	47.2	6.9	3.9	0.4	2.0
E835041	0.31	< 0.1	23.6	17.8	169	27.4	3.2	236	9.0	0.55	< 0.1	1	0.6	< 0.1	453	13.2	33.7	2.6	8.5	1.1	0.9	< 0.1	0.6
E835042	< 0.02	< 0.1	121	19.7	< 0.1	14.7	28.6	80	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	152	4.7	12.5	1.8	8.6	2.6	3.6	0.7	5.1
E835043	0.10	< 0.1	149	17.7	4.8	6.2	25.8	40	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	127	5.0	15.9	2.1	9.9	2.7	3.3	0.6	4.6
E835044	0.07	< 0.1	156	20.9	< 0.1	17.8	30.5	91	0.1	< 0.05	< 0.1	< 1	0.1	< 0.1	204	3.7	10.4	1.5	7.6	2.5	3.4	0.6	5.1
E835045	0.05	< 0.1	22.1	1.4	10.2	0.3	6.3	4	0.3	0.32	< 0.1	< 1	0.6	< 0.1	5	3.6	6.3	0.6	2.4	0.4	0.5	< 0.1	0.8
E835046	0.06	< 0.1	59.1	13.2	< 0.1	7.8	11.8	24	0.2	0.09	< 0.1	< 1	0.4	< 0.1	45	1.2	3.5	0.6	3.2	1.1	1.5	0.3	2.1
E835047	0.06	< 0.1	42.3	18.2	< 0.1	7.3	25.9	66	0.3	0.06	0.2	< 1	0.2	< 0.1	37	6.3	15.2	2.2	9.9	2.8	3.2	0.6	4.4
E835048	0.53	1.1	948	24.4	1.2	1.2	19.4	116	0.6	1.62	0.3	2	0.2	< 0.1	26	10.8	24.0	2.7	8.6	2.0	2.6	0.5	3.6
E835049	0.03	< 0.1	68.5	11.6	4.0	1.7	10.5	31	1.6	0.15	< 0.1	< 1	1.1	< 0.1	12	1.3	4.0	0.6	3.5	1.1	1.4	0.3	1.9
E835050	0.17	< 0.1	82.4	11.0	167	35.4	17.6	32	7.0	7.60	< 0.1	2	2.7	< 0.1	406	13.2	29.4	3.8	14.0	2.8	2.6	0.4	3.1
E835051	< 0.02	< 0.1	128	18.3	0.9	9.6	29.7	73	0.7	0.10	< 0.1	< 1	0.1	< 0.1	156	5.2	14.3	2.0	9.3	2.8	3.6	0.6	5.3
E835052	0.06	< 0.1	56.5	11.3	305	36.1	15.9	78	3.7	0.44	< 0.1	1	0.4	< 0.1	171	8.2	18.3	2.3	9.1	2.0	2.2	0.4	2.8
E835053	0.32	< 0.1	18.3	18.8	2.8	41.5	9.4	132	4.6	1.55	< 0.1	< 1	< 0.1	< 0.1	92	9.2	21.5	2.6	9.1	1.8	1.4	0.3	1.8
E835054	0.03	< 0.1	91.1	7.8	0.7	4.5	12.9	39	0.2	0.08	< 0.1	< 1	0.3	< 0.1	197	2.0	5.3	0.9	4.2	1.4	1.8	0.3	2.5
E835055	0.30	2.6	382	7.6	1.9	4.5	6.8	27	1.2	1.70	0.2	2	0.3	0.5	91	3.6	8.5	1.1	4.6	1.0	1.1	0.2	1.3
E835056	0.10	< 0.1	86.4	14.6	10.8	2.2	15.0	63	0.2	0.14	< 0.1	< 1	0.5	< 0.1	89	2.2	5.8	0.8	4.0	1.2	1.9	0.3	2.9
E835057	0.06	< 0.1	111	16.3	< 0.1	9.2	20.2	45	0.2	0.17	< 0.1	< 1	0.1	< 0.1	53	4.5	11.0	1.7	7.6	2.1	2.6	0.4	3.6
E835058	0.02	< 0.1	80.7	9.9	1.5	1.3	11.6	34	0.2	0.08	< 0.1	< 1	0.1	< 0.1	26	2.6	6.9	1.0	4.9	1.4	1.8	0.3	2.3
E835059	< 0.02	< 0.1	87.8	8.9	1.1	0.6	9.7	29	0.6	0.24	< 0.1	< 1	0.8	< 0.1	17	1.8	4.8	0.8	4.0	1.3	1.5	0.3	1.9
E835060	0.02	< 0.1	54.6	10.6	< 0.1	142	10.0	206	6.5	1.11	< 0.1	< 1	< 0.1	< 0.1	861	68.3	150	16.9	57.7	8.0	4.7	0.4	2.5
E835061	0.02	< 0.1	117	17.1	3.8	9.0	28.4	94	0.2	0.06	< 0.1	< 1	< 0.1	< 0.1	148	6.7	16.6	2.4	10.9	3.1	3.8	0.6	5.1
E835062	0.08	< 0.1	115	9.2	16.8	2.5	10.2	34	< 0.1	0.08	< 0.1	< 1	0.4	< 0.1	68	2.0	5.6	0.9	4.3	1.4	1.6	0.3	2.0
E835063	< 0.02	< 0.1	116	16.6	< 0.1	1.7	28.9	74	0.2	0.08	< 0.1	< 1	< 0.1	< 0.1	106	2.5	7.6	1.2	6.3	2.5	3.6	0.6	5.3
E835064	0.10	< 0.1	136	12.9	1.0	24.8	14.9	45	0.2	0.07	< 0.1	< 1	< 0.1	< 0.1	162	2.5	6.9	1.0	4.9	1.5	1.8	0.3	2.7



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835065	< 0.02	< 0.1	93.0	13.1	8.4	8.4	16.2	49	< 0.1	< 0.05	< 0.1	< 1	0.2	< 0.1	70	2.7	7.3	1.2	5.9	2.0	2.3	0.4	3.2
E835066	0.04	< 0.1	101	10.0	0.7	0.6	11.6	36	0.5	0.14	< 0.1	< 1	0.3	< 0.1	33	2.1	6.3	1.0	4.9	1.5	1.9	0.3	2.3
E835067	0.03	0.3	18.6	0.8	8.6	0.4	2.6	2	0.1	0.53	< 0.1	< 1	0.6	0.1	1	0.9	1.9	0.2	1.0	0.2	0.2	< 0.1	0.3
E835068	0.03	< 0.1	110	21.3	< 0.1	0.6	24.4	74	1.3	0.17	< 0.1	< 1	0.3	< 0.1	16	3.2	10.9	1.5	7.4	2.3	3.2	0.5	4.3
E835069	0.03	< 0.1	110	18.1	< 0.1	2.4	26.4	69	0.2	0.12	< 0.1	< 1	0.1	< 0.1	87	4.5	12.3	1.7	8.3	2.5	3.2	0.6	4.6
E835070	1.28	0.6	37.3	7.2	9650	18.4	8.5	38	1.7	5.12	< 0.1	5	3.2	0.7	44	6.8	15.3	1.8	7.0	1.2	1.3	0.2	1.2
E835071	0.03	< 0.1	96.8	17.3	1.0	13.9	18.0	62	0.2	< 0.05	< 0.1	< 1	< 0.1	< 0.1	128	3.5	10.1	1.6	7.2	2.0	2.4	0.4	3.2
E835072	0.02	< 0.1	117	17.7	0.2	1.4	30.7	83	0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	71	6.8	17.7	2.5	11.8	2.9	4.0	0.7	5.2
E835073	0.46	< 0.1	51.9	9.6	0.6	29.0	7.4	94	3.5	2.07	< 0.1	< 1	0.1	< 0.1	59	5.8	12.5	1.4	5.0	0.9	0.9	0.1	1.2
E835074	0.02	< 0.1	83.8	9.5	3.5	0.7	11.4	35	0.1	0.13	< 0.1	< 1	0.5	< 0.1	52	1.5	4.5	0.7	3.6	1.3	1.5	0.3	2.2
E835075	0.11	< 0.1	103	22.1	< 0.1	6.1	36.7	126	0.4	0.10	< 0.1	< 1	0.2	< 0.1	116	7.1	18.1	2.4	9.9	2.9	3.8	0.7	5.8
E835076	0.02	< 0.1	114	19.3	< 0.1	1.3	27.9	81	0.6	0.09	< 0.1	< 1	< 0.1	< 0.1	50	2.7	7.5	1.2	6.0	2.3	3.2	0.6	4.7
GXR-1 Meas	1310	14.6	719	6.3	414	2.5	23.2	25	0.8	18.3	0.8	30	47.1	9.7	596	6.4	14.5		8.3	2.5	3.5	0.6	4.2
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1300	17.3	792	5.8	449	2.9	28.7	26	0.8	19.4	0.7	29	43.4	9.4	614	6.9	15.3		8.6	2.9	3.7	0.6	4.8
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	17.5	5.5	67.2	18.5	109	143	13.6	45	10.2	316	0.2	7	4.8	0.8	147	53.9	105		45.1	6.0	4.2	0.4	2.7
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
GXR-4 Meas	17.5	6.0	68.3	15.1	106	142	12.8	42	10.1	339	0.2	8	4.6	0.9	141	51.9	109		42.6	6.0	4.4	0.5	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			95.4	18.0	< 0.1	94.7		41	0.4			< 1	< 0.1		571	35.3	86.3		40.2	6.9	6.1	0.8	6.0
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			102	19.8	< 0.1	118		41	1.9			< 1	0.2		609	37.6	91.5		42.5	7.5	6.2	0.9	6.1
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			105	18.9	< 0.1	90.6		49	3.4			1	0.2		562	32.7	85.3		37.8	7.1	6.1	0.9	6.2
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.17	< 0.1	117	20.7	280	70.6	11.6	96	2.7	1.07	< 0.1	< 1	1.4	< 0.1	1090	11.3	35.7		12.9	2.3	2.3	0.3	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.19	< 0.1	141	21.5	275	78.7	12.6	85	0.2	0.55	< 0.1	< 1	0.4	< 0.1	1200	11.9	36.5		13.6	2.5	2.1	0.3	2.4
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.18	0.5	135	18.8	241	83.7	12.5	66	0.1	0.25	< 0.1	< 1	0.2	< 0.1	1160	11.9	36.9		13.4	2.5	2.2	0.3	2.5
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			60.6	13.3		3.5	15.8	43	1.3				0.4		97	3.4			5.2				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			63.1	15.0		3.7	17.0	40	1.6				0.6		104	3.7			5.6				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.61		175	23.0	22.8	107	30.3	126	12.3	2.31		3	1.2		529	46.1	111	13.1	50.8	8.9	7.4	0.9	6.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.71		197	22.8	27.5	144	31.3	135	15.3	2.38		4	1.4		752	48.7	111	13.5	53.0	9.5	7.5	1.0	6.7
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.63		184	20.2	25.1	137	30.1	130	14.4	2.22		4	1.3		724	44.6	106	12.8	48.7	9.4	7.1	1.0	6.6
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.33		40.5	20.9	5.4	40.8	10.8	74	0.5	0.30	< 0.1	< 1	< 0.1		171	15.8	38.2	4.2	15.6	2.7	2.5	0.3	2.5
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.31		40.2	22.0	8.0	40.8	11.1	93	0.7	0.45	< 0.1	< 1	< 0.1		174	15.8	38.4	4.2	15.3	2.6	2.3	0.3	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.33		36.4	23.0	15.1	41.8	11.0	141	3.6	1.06	< 0.1	1	2.5		168	15.4	38.4	4.2	14.8	2.8	2.3	0.3	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	0.96		776	11.8		103	24.0	115	6.5	12.3					872	41.6	102	11.2	40.7	6.5	5.1	0.7	4.9
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	1.00		803	11.7		120	24.6	128	7.3	10.9					951	41.7	99.8	11.0	40.0	6.5	5.0	0.7	4.9
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 214 Meas																							
OREAS 214 Cert																							
OREAS 216 (Fire Assay) Meas																							
OREAS 216 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
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OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
E832474 Orig	0.03	< 0.1	80.3	15.7	0.3	18.4	13.0	40	1.8	0.62	< 0.1	< 1	0.3	< 0.1	73	1.8	5.0	0.7	3.9	1.2	1.7	0.3	2.4
E832474 Dup	0.03	< 0.1	81.7	16.2	< 0.1	24.3	14.3	39	0.3	0.15	< 0.1	< 1	0.1	< 0.1	75	1.9	5.1	0.8	4.2	1.3	1.8	0.3	2.5
E832475 Orig																							
E832475 Dup																							
E832485 Orig																							
E832485 Dup																							
E832492 Orig	0.03	0.2	108	9.4	60.3	2.0	8.8	29	1.3	0.79	< 0.1	< 1	6.2	< 0.1	28	1.9	5.3	0.8	4.0	1.2	1.4	0.2	1.8
E832492 Dup	0.05	0.2	118	9.9	39.5	2.1	9.7	33	0.2	1.60	< 0.1	< 1	1.6	< 0.1	34	2.5	6.2	1.0	4.6	1.3	1.7	0.3	2.0
E832495 Orig																							
E832495 Dup																							
E835011 Orig																							
E835011 Dup																							
E835012 Orig	< 0.02	< 0.1	82.4	9.2	2.9	0.9	10.1	34	1.1	0.19	< 0.1	< 1	0.8	< 0.1	16	1.7	4.9	0.8	4.0	1.2	1.6	0.3	2.0
E835012 Dup	< 0.02	< 0.1	86.3	9.7	4.5	0.9	10.7	36	1.6	0.23	< 0.1	< 1	1.8	< 0.1	17	1.7	5.1	0.8	4.2	1.4	1.7	0.3	2.1
E835015 Orig	0.06	< 0.1	107	9.0	11.3	0.9	10.2	39	0.2	0.25	< 0.1	< 1	0.3	< 0.1	52	2.0	4.6	0.6	3.4	1.2	1.5	0.3	2.0
E835015 Split	0.08	0.5	126	10.0	32.3	1.0	11.5	43	1.9	0.53	< 0.1	< 1	0.6	< 0.1	58	2.5	5.5	0.7	3.8	1.3	1.7	0.3	2.1
E835020 Orig																							
E835020 Dup																							
E835031 Orig																							
E835031 Dup																							
E835039 Orig	0.06	< 0.1	56.4	17.6	7.3	57.8	12.5	158	3.5	0.29	< 0.1	1	0.4	< 0.1	312	15.8	39.0	4.1	15.5	2.8	2.8	0.4	2.5
E835039 Dup	0.07	< 0.1	57.1	17.6	6.4	55.0	12.3	155	2.4	0.25	< 0.1	1	0.3	< 0.1	302	15.2	37.9	3.9	14.9	2.9	2.6	0.4	2.4
E835044 Orig																							
E835044 Dup																							
E835054 Orig																							
E835054 Dup																							
E835064 Orig																							
E835064 Dup																							
E835065 Orig	< 0.02	< 0.1	93.0	13.1	8.4	8.4	16.2	49	< 0.1	< 0.05	< 0.1	< 1	0.2	< 0.1	70	2.7	7.3	1.2	5.9	2.0	2.3	0.4	3.2
E835065 Split	0.03	< 0.1	89.0	13.2	20.6	7.5	16.2	49	0.4	1.92	< 0.1	< 1	0.2	< 0.1	65	2.7	7.6	1.2	5.9	1.9	2.4	0.4	3.1
E835069 Orig	0.03	< 0.1	110	18.1	< 0.1	2.4	26.4	69	0.2	0.12	< 0.1	< 1	0.1	< 0.1	87	4.5	12.3	1.7	8.3	2.5	3.2	0.6	4.6
E835069 Dup	0.02	< 0.1	117	19.0	< 0.1	2.4	27.6	75	0.2	0.07	< 0.1	< 1	0.1	< 0.1	92	4.7	12.6	1.8	8.5	2.7	3.4	0.6	4.8
E835075 Orig																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835075 Dup																							
Method Blank	< 0.02	< 0.1	0.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	0.4	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E832466	58.3	1.1	< 0.1	0.7	< 0.1	< 0.1	58.0	0.4	< 0.001	< 0.05	0.7	0.2	< 0.1	
E832467	115	0.4	0.2	1.5	0.2	< 0.1	86.8	< 0.1	< 0.001	< 0.05	4.0	0.7	0.2	
E832468	122	0.1	0.4	2.7	0.4	0.2	9.7	0.3	< 0.001	< 0.05	2.4	2.2	0.6	
E832469	14.0	0.4	< 0.1	0.6	< 0.1	< 0.1	31.4	0.3	< 0.001	< 0.05	1.3	1.0	0.3	
E832470	64.9	0.2	0.1	0.7	< 0.1	0.1	73.3	92.2	< 0.001	0.11	8.2	1.6	0.5	12.0
E832471	25.0	0.5	0.2	1.1	0.2	< 0.1	41.6	0.1	< 0.001	< 0.05	4.0	0.4	1.9	
E832472	84.6	0.9	0.1	0.9	0.1	< 0.1	12.5	< 0.1	< 0.001	< 0.05	2.4	0.4	0.1	
E832473	11.7	< 0.1	< 0.1	0.2	< 0.1	< 0.1	20.6	2.0	< 0.001	< 0.05	2.2	0.1	0.2	
E832474	183	0.3	0.2	1.5	0.2	0.1	47.4	1.3	< 0.001	0.15	1.8	0.2	< 0.1	
E832475	30.8	1.1	0.1	0.8	0.1	< 0.1	17.8	0.2	< 0.001	< 0.05	0.9	0.3	< 0.1	
E832476	25.0	0.3	0.2	1.2	0.2	< 0.1	43.1	0.5	< 0.001	0.06	3.0	1.6	0.6	
E832477	72.5	0.9	< 0.1	0.5	< 0.1	0.2	17.9	0.6	< 0.001	0.25	5.9	2.6	0.9	
E832478	44.5	0.2	0.1	1.0	0.1	< 0.1	34.0	0.7	< 0.001	0.37	4.3	0.2	0.1	
E832479	83.8	0.5	0.4	2.4	0.3	< 0.1	77.9	< 0.1	< 0.001	0.07	2.4	0.4	0.2	
E832480	5.9	< 0.1	0.1	0.8	0.1	0.4	215	0.9	< 0.001	1.20	38.0	57.3	2.7	
E832481	83.9	0.3	0.4	2.7	0.4	< 0.1	144	0.8	< 0.001	0.16	3.0	1.3	0.3	
E832482	48.4	0.2	< 0.1	0.5	< 0.1	< 0.1	44.3	3.1	< 0.001	< 0.05	0.9	0.2	< 0.1	
E832483	99.4	0.9	0.2	1.5	0.2	< 0.1	73.2	0.3	< 0.001	0.11	1.5	0.2	< 0.1	
E832484	19.0	1.2	< 0.1	0.6	< 0.1	< 0.1	19.7	< 0.1	< 0.001	< 0.05	0.7	0.3	< 0.1	
E832485	78.5	0.3	0.4	2.7	0.4	< 0.1	110	< 0.1	< 0.001	0.08	8.9	1.8	0.5	
E832486	113	0.4	0.5	3.4	0.5	< 0.1	104	< 0.1	< 0.001	< 0.05	4.3	1.3	0.3	
E832487	73.2	0.7	0.1	1.0	0.1	< 0.1	23.5	< 0.1	< 0.001	< 0.05	1.2	0.3	0.1	
E832488	147	0.6	0.2	1.1	0.2	< 0.1	33.6	< 0.1	< 0.001	< 0.05	3.0	0.5	0.1	
E832489	169	0.5	0.5	3.5	0.5	< 0.1	163	< 0.1	< 0.001	< 0.05	2.8	1.2	0.3	
E832490	193	< 0.1	0.3	1.8	0.3	0.4	175	2.3	< 0.001	2.31	36.3	4.8	3.1	
E832491	82.1	1.1	0.2	1.3	0.2	0.1	62.5	4.3	< 0.001	0.09	4.4	1.0	0.2	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E832492	102	0.3	0.1	0.9	0.1	< 0.1	20.0	0.5	< 0.001	< 0.05	1.5	0.4	0.1		
E832493	28.0	0.3	0.2	1.0	0.2	< 0.1	70.9	< 0.1	< 0.001	0.21	3.0	0.4	0.1		
E832494	246	0.4	0.3	1.9	0.3	< 0.1	47.2	< 0.1	< 0.001	< 0.05	6.5	0.9	0.3		
E832495	45.6	< 0.1	0.5	3.3	0.5	< 0.1	69.5	< 0.1	< 0.001	< 0.05	2.7	1.2	0.3		
E832496	134	0.1	0.5	3.0	0.4	< 0.1	110	< 0.1	< 0.001	< 0.05	3.0	1.3	0.3		
E832497	104	0.5	0.2	1.4	0.2	< 0.1	53.4	< 0.1	< 0.001	< 0.05	4.4	0.7	0.2		
E832498	105	0.3	0.3	1.7	0.2	< 0.1	33.9	< 0.1	< 0.001	< 0.05	2.4	0.7	0.4		
E832499	5.0	0.4	0.1	1.0	0.1	< 0.1	7.9	0.5	< 0.001	< 0.05	20.4	0.4	0.1		
E832500	6.7	< 0.1	< 0.1	0.3	< 0.1	0.3	187	0.6	< 0.001	0.94	35.9	26.7	2.0		
E835001	89.5	0.3	0.3	1.9	0.3	0.1	47.0	2.5	< 0.001	0.26	2.7	0.4	0.2		
E835002	79.5	0.9	0.4	2.5	0.4	0.3	106	0.9	< 0.001	< 0.05	2.5	0.8	0.3		
E835003	136	0.4	0.2	1.1	0.1	< 0.1	11.5	< 0.1	< 0.001	< 0.05	2.2	0.5	0.1		
E835004	82.1	< 0.1	0.5	3.3	0.5	< 0.1	69.6	< 0.1	< 0.001	< 0.05	3.5	1.2	0.3		
E835005	27.3	0.9	< 0.1	0.5	< 0.1	< 0.1	19.3	0.4	< 0.001	< 0.05	1.3	0.2	< 0.1		
E835006	9.8	0.2	< 0.1	0.4	< 0.1	< 0.1	< 0.2	3.3	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
E835007	6.0	< 0.1	< 0.1	0.5	< 0.1	0.3	49.3	0.5	< 0.001	0.24	8.4	5.9	1.3		
E835008	67.0	0.1	0.5	3.3	0.5	< 0.1	121	< 0.1	< 0.001	< 0.05	4.3	1.2	0.3		
E835009	49.2	0.6	0.2	1.1	0.2	< 0.1	138	< 0.1	< 0.001	< 0.05	2.4	0.3	0.3		
E835010	185	< 0.1	0.2	1.7	0.2	0.4	147	2.1	< 0.001	2.23	33.6	3.7	2.3		
E835011	88.1	0.6	0.2	1.2	0.1	< 0.1	60.8	< 0.1	< 0.001	< 0.05	1.9	0.6	0.8		
E835012	136	1.0	0.2	1.0	0.1	< 0.1	26.2	0.2	< 0.001	< 0.05	2.1	0.4	0.1		
E835013	92.6	< 0.1	0.5	3.1	0.4	< 0.1	122	< 0.1	< 0.001	< 0.05	2.9	1.3	0.3		
E835014	75.2	0.1	0.5	3.1	0.5	< 0.1	39.0	0.2	< 0.001	< 0.05	1.5	1.3	0.4		
E835015	95.9	0.6	0.2	1.1	0.2	< 0.1	28.4	< 0.1	< 0.001	< 0.05	4.6	0.5	0.2		
E835016	40.5	0.8	0.2	1.2	0.2	< 0.1	68.3	0.4	< 0.001	< 0.05	3.4	0.7	0.3		
E835017	92.9	< 0.1	0.4	2.9	0.4	< 0.1	106	< 0.1	< 0.001	0.14	2.9	1.2	0.3		
E835018	353	0.5	0.4	3.0	0.4	< 0.1	42.7	0.5	< 0.001	< 0.05	6.4	1.3	0.4		
E835019	54.2	0.5	0.3	2.3	0.3	< 0.1	97.6	0.8	< 0.001	0.15	5.4	1.1	0.3		
E835020	5.2	< 0.1	< 0.1	0.5	< 0.1	0.3	233	0.3	< 0.001	1.00	38.0	45.8	2.6		
E835021	215	0.7	0.5	3.4	0.4	< 0.1	149	0.4	< 0.001	< 0.05	2.8	1.5	0.3		
E835022	29.8	0.7	0.2	1.5	0.2	< 0.1	73.2	< 0.1	< 0.001	< 0.05	4.1	2.5	0.6		
E835023	30.9	0.2	0.4	2.9	0.4	< 0.1	144	< 0.1	< 0.001	< 0.05	3.3	1.0	0.2		
E835024	88.5	0.6	0.4	2.6	0.4	< 0.1	67.3	0.2	< 0.001	< 0.05	3.1	0.5	0.2		
E835025	54.5	0.1	0.5	3.6	0.5	< 0.1	86.9	< 0.1	< 0.001	< 0.05	3.0	1.2	0.3		
E835026	72.0	0.3	0.5	3.3	0.4	< 0.1	99.5	< 0.1	< 0.001	< 0.05	2.6	1.1	0.3		
E835027	95.7	1.3	0.1	0.8	0.1	< 0.1	25.9	4.1	< 0.001	< 0.05	5.7	0.6	0.2		
E835028	86.8	0.1	0.5	3.1	0.4	< 0.1	194	< 0.1	< 0.001	< 0.05	2.3	1.4	0.3		
E835029	47.3	0.4	0.5	3.0	0.4	< 0.1	109	0.1	< 0.001	0.06	1.9	1.2	0.3		
E835030	209	0.6	0.3	2.2	0.3	0.2	436	4.8	< 0.001	0.30	26.2	3.4	1.4		
E835031	25.2	0.8	0.4	3.0	0.4	0.3	65.1	4.1	< 0.001	< 0.05	24.5	0.9	0.3		
E835032	43.3	< 0.1	0.5	3.5	0.5	< 0.1	64.0	< 0.1	< 0.001	< 0.05	3.9	1.4	0.4		
E835033	30.2	0.1	0.4	2.6	0.4	< 0.1	87.5	< 0.1	< 0.001	< 0.05	2.2	0.9	0.2		
E835034	80.2	< 0.1	0.4	2.7	0.4	< 0.1	84.7	< 0.1	< 0.001	< 0.05	5.5	1.1	0.2		

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E835035	27.6	0.6	0.2	1.5	0.2	< 0.1	88.6	< 0.1	< 0.001	< 0.05	4.5	2.7	0.6		
E835036	28.9	0.5	0.2	1.5	0.2	0.1	57.6	0.3	< 0.001	0.08	3.7	1.2	0.3		
E835037	24.0	0.4	< 0.1	0.5	< 0.1	< 0.1	49.6	2.5	< 0.001	< 0.05	1.2	0.2	< 0.1		
E835038	32.7	0.5	0.2	1.4	0.2	< 0.1	40.6	< 0.1	< 0.001	< 0.05	4.0	0.6	0.2		
E835039	54.6	0.3	0.2	1.4	0.2	0.2	167	0.3	< 0.001	0.22	9.0	7.4	1.5		
E835040	4.4	< 0.1	< 0.1	0.6	< 0.1	0.4	269	2.7	< 0.001	1.05	43.6	45.3	3.3		
E835041	18.1	< 0.1	< 0.1	0.3	< 0.1	0.7	59.8	20.7	< 0.001	0.29	14.9	6.0	1.0		
E835042	64.3	< 0.1	0.5	3.1	0.5	< 0.1	82.1	< 0.1	< 0.001	0.07	2.3	1.2	0.3		
E835043	111	0.1	0.4	3.0	0.4	< 0.1	75.6	< 0.1	< 0.001	< 0.05	5.3	1.4	0.4		
E835044	159	0.1	0.5	3.5	0.5	< 0.1	82.0	< 0.1	< 0.001	0.10	2.7	1.3	0.3		
E835045	2.4	0.4	< 0.1	0.6	< 0.1	< 0.1	5.5	0.5	< 0.001	< 0.05	1.2	< 0.1	< 0.1		
E835046	19.3	0.6	0.2	1.4	0.2	< 0.1	162	< 0.1	< 0.001	< 0.05	2.9	0.2	0.1		
E835047	58.5	0.3	0.4	2.9	0.4	< 0.1	55.2	< 0.1	< 0.001	< 0.05	1.3	1.2	0.3		
E835048	286	0.3	0.3	1.9	0.3	< 0.1	10.2	< 0.1	0.004	0.07	20.2	2.7	0.8		
E835049	13.4	0.9	0.2	1.2	0.2	0.1	39.2	0.2	< 0.001	< 0.05	2.8	0.7	0.2		
E835050	289	< 0.1	0.3	2.0	0.3	0.4	327	2.3	0.002	0.23	19.0	4.4	1.5		
E835051	96.5	0.1	0.5	3.4	0.5	< 0.1	91.6	< 0.1	< 0.001	< 0.05	2.3	1.4	0.3		
E835052	23.4	< 0.1	0.3	1.7	0.2	0.3	67.0	4.5	< 0.001	0.23	4.3	2.2	0.5		
E835053	38.9	< 0.1	0.2	1.2	0.2	0.2	48.8	0.5	< 0.001	0.41	7.2	4.5	1.5		
E835054	87.3	0.8	0.2	1.3	0.2	< 0.1	45.7	< 0.1	< 0.001	< 0.05	2.9	0.5	0.1		
E835055	115	0.3	0.1	0.8	0.1	< 0.1	14.3	0.2	0.001	< 0.05	10.4	1.4	0.4		
E835056	128	0.4	0.3	1.8	0.3	< 0.1	69.1	0.2	< 0.001	< 0.05	9.5	0.9	0.2		
E835057	27.2	0.3	0.3	2.3	0.3	< 0.1	98.4	< 0.1	< 0.001	0.06	3.6	0.8	0.2		
E835058	101	0.5	0.2	1.2	0.2	< 0.1	37.6	< 0.1	< 0.001	< 0.05	1.9	0.5	0.1		
E835059	113	0.7	0.2	1.0	0.1	< 0.1	10.9	< 0.1	< 0.001	< 0.05	2.9	0.4	0.1		
E835060	6.0	< 0.1	0.1	0.8	0.1	0.2	240	0.3	< 0.001	1.06	38.7	46.2	3.2		
E835061	87.7	< 0.1	0.5	3.3	0.5	< 0.1	81.9	< 0.1	< 0.001	< 0.05	3.4	1.4	0.3		
E835062	46.9	0.5	0.2	1.0	0.1	< 0.1	100	< 0.1	< 0.001	< 0.05	3.7	0.5	0.1		
E835063	30.1	0.1	0.5	3.3	0.5	< 0.1	64.9	< 0.1	< 0.001	< 0.05	2.6	1.3	0.4		
E835064	51.7	0.5	0.3	1.7	0.3	< 0.1	56.8	< 0.1	< 0.001	0.28	10.5	0.6	0.2		
E835065	14.0	0.3	0.3	1.7	0.2	< 0.1	39.0	< 0.1	< 0.001	< 0.05	1.4	0.6	0.2		
E835066	113	0.8	0.2	1.2	0.2	< 0.1	58.3	< 0.1	< 0.001	< 0.05	8.4	0.7	14.2		
E835067	24.7	0.2	< 0.1	0.3	< 0.1	< 0.1	0.2	0.1	< 0.001	< 0.05	1.0	< 0.1	< 0.1		
E835068	66.3	0.5	0.4	2.7	0.4	< 0.1	233	0.1	< 0.001	< 0.05	3.4	1.0	0.3		
E835069	62.6	0.1	0.4	2.8	0.4	< 0.1	157	< 0.1	< 0.001	< 0.05	2.9	1.2	0.3		
E835070	71.3	0.1	0.1	1.0	0.1	0.1	77.9	99.4	< 0.001	0.13	8.5	1.8	0.5	13.5	
E835071	145	0.1	0.3	2.0	0.3	< 0.1	129	0.1	< 0.001	0.08	2.7	0.5	0.1		
E835072	141	< 0.1	0.5	3.2	0.5	< 0.1	84.2	< 0.1	< 0.001	< 0.05	6.6	1.5	0.4		
E835073	48.7	0.1	0.1	0.9	0.1	0.3	13.8	0.5	< 0.001	0.22	5.5	3.5	0.9		
E835074	54.4	0.5	0.2	1.1	0.1	< 0.1	32.1	< 0.1	< 0.001	< 0.05	2.5	0.4	0.1		
E835075	166	< 0.1	0.7	4.6	0.7	< 0.1	104	< 0.1	< 0.001	< 0.05	3.7	2.2	0.5		
E835076	19.1	0.3	0.5	3.0	0.5	< 0.1	71.2	< 0.1	< 0.001	< 0.05	2.9	0.9	0.2		

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
GXR-1 Meas	1040		0.3	1.9	0.2	< 0.1	272	145		0.39	696	2.3	34.9	
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
GXR-1 Meas	1070		0.3	2.1	0.3	< 0.1	311	148		0.39	724	2.6	34.2	
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas												> 500	2390	
DH-1a Cert												910	2629	
DH-1a Meas												> 500	2450	
DH-1a Cert												910	2629	
DH-1a Meas												> 500	2310	
DH-1a Cert												910	2629	
GXR-4 Meas	6150		0.2	1.0	0.1	0.6	213	34.1		3.34	49.8	19.1	6.0	
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
GXR-4 Meas	5990		0.2	1.0	0.1	0.6	217	34.6		3.28	49.8	21.5	5.8	
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas	27.4		0.5	3.3		< 0.1	161	0.3		0.61	24.1	12.0	2.8	
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
SDC-1 Meas	30.8		0.5	3.2		0.1	169	< 0.1		0.66	29.8	12.1	2.8	
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
SDC-1 Meas	31.8		0.5	3.1		0.2	172	0.1		0.64	24.8	11.4	2.7	
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas	64.7			1.6	0.3	0.2	33.0	1.0		2.29	101	5.4	1.6	
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
GXR-6 Meas	73.0			1.7	0.3	< 0.1	36.6	< 0.1		2.43	109	5.4	1.5	
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
GXR-6 Meas	70.4			1.7	0.3	< 0.1	37.2	< 0.1		2.29	104	5.5	1.5	
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas	97.0			2.0			142				6.3			
DNC-1a Cert	100			2.0			144				6.3			
DNC-1a Meas	98.6			2.0			149				10.2			
DNC-1a Cert	100			2.0			144				6.3			
SBC-1 Meas	29.3		0.5	3.4	0.5	0.8	171	1.9		0.93	36.1	16.4	6.2	
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas	32.2		0.5	3.4	0.5	0.8	182	3.5		0.97	38.0	17.2	6.4	
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas	30.1		0.5	3.2	0.5	0.8	175	1.5		0.92	35.6	16.0	5.9	
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas	371			1.5	0.2	< 0.1	31.0	0.3		0.27	22.9	15.6	3.1	
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d	378			1.4	0.2	< 0.1	31.2	< 0.1		0.25	21.6	15.2	3.0	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
(4-Acid) Meas														
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d (4-Acid) Meas	368			1.3	0.2	< 0.1	31.4	0.1		0.26	22.4	15.2	2.9	
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas	236		0.4	2.9	0.4	0.3	135	1.0			764	14.8	2.7	
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
SdAR-M2 (U.S.G.S.) Meas	242		0.4	2.7	0.4	0.4	138	1.1			768	14.9	2.6	
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 214 Meas														2.98
OREAS 214 Cert														3.03
OREAS 216 (Fire Assay) Meas														6.93
OREAS 216 (Fire Assay) Cert														6.66
OREAS 223 (Fire Assay) Meas														
OREAS 223 (Fire Assay) Cert														
OREAS 223 (Fire Assay) Meas														
OREAS 223 (Fire Assay) Cert														
OREAS 223 (Fire Assay) Meas														
OREAS 223 (Fire Assay) Cert														
OREAS 223 (Fire Assay) Meas														
OREAS 223 (Fire Assay) Cert														
OREAS 223 (Fire Assay) Meas														
OREAS 223 (Fire Assay) Cert														
OREAS 218 Meas														
OREAS 218 Cert														
OREAS 218 Meas														
OREAS 218 Cert														
OREAS 218 Meas														
OREAS 218 Cert														
OREAS 218 Meas														
OREAS 218 Cert														
OREAS 220 (Fire														



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
Assay) Meas														
OREAS 220 (Fire Assay) Cert														
E832474 Orig	183	0.3	0.2	1.5	0.2	0.1	47.4	1.3	< 0.001	0.15	1.8	0.2	< 0.1	
E832474 Dup	192	0.3	0.2	1.6	0.2	< 0.1	45.1	< 0.1	< 0.001	0.14	1.6	0.2	< 0.1	
E832475 Orig														
E832475 Dup														
E832485 Orig														
E832485 Dup														
E832492 Orig	102	0.3	0.1	0.9	0.1	< 0.1	20.0	0.5	< 0.001	< 0.05	1.5	0.4	0.1	
E832492 Dup	115	0.7	0.2	1.0	0.1	< 0.1	21.5	< 0.1	< 0.001	< 0.05	1.9	0.7	1.9	
E832495 Orig														
E832495 Dup														
E835011 Orig														
E835011 Dup														
E835012 Orig	136	1.0	0.2	1.0	0.1	< 0.1	26.2	0.2	< 0.001	< 0.05	2.1	0.4	0.1	
E835012 Dup	145	0.6	0.2	1.1	0.2	0.1	28.6	0.4	< 0.001	< 0.05	2.1	0.4	0.1	
E835015 Orig	95.9	0.6	0.2	1.1	0.2	< 0.1	28.4	< 0.1	< 0.001	< 0.05	4.6	0.5	0.2	
E835015 Split	101	1.0	0.2	1.2	0.2	0.1	33.9	0.5	< 0.001	< 0.05	5.4	0.6	0.2	
E835020 Orig														
E835020 Dup														
E835031 Orig														
E835031 Dup														
E835039 Orig	54.6	0.3	0.2	1.4	0.2	0.2	167	0.3	< 0.001	0.22	9.0	7.4	1.5	
E835039 Dup	61.3	0.2	0.2	1.3	0.2	0.1	157	0.1	< 0.001	0.21	8.6	7.0	1.4	
E835044 Orig														
E835044 Dup														
E835054 Orig														
E835054 Dup														
E835064 Orig														
E835064 Dup														
E835065 Orig	14.0	0.3	0.3	1.7	0.2	< 0.1	39.0	< 0.1	< 0.001	< 0.05	1.4	0.6	0.2	
E835065 Split	28.9	0.3	0.2	1.7	0.2	< 0.1	37.5	0.1	0.001	< 0.05	1.3	0.6	0.2	
E835069 Orig	62.6	0.1	0.4	2.8	0.4	< 0.1	157	< 0.1	< 0.001	< 0.05	2.9	1.2	0.3	
E835069 Dup	65.5	0.1	0.4	2.9	0.4	< 0.1	162	< 0.1	< 0.001	< 0.05	3.0	1.2	0.3	
E835075 Orig														
E835075 Dup														
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank														
Method Blank														
Method Blank														

**Results**

**Activation Laboratories Ltd.**

**Report: A17-09168**

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														< 0.03



**Date Submitted:** 06-Sep-17  
**Invoice No.:** A17-09668  
**Invoice Date:** 17-Oct-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

87 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT      **A17-09668**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-09668

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832338	31	< 0.5	0.01	0.13	0.18	0.03	3.83	< 0.1	3	9.1	89	0.09	< 0.1	7.4	< 0.1	< 0.1	< 0.1	40	< 0.05	0.11	0.5	< 0.05	0.04
E832339	28	< 0.5	0.02	0.18	0.16	0.03	3.07	0.1	3	3.3	185	0.31	< 0.1	3.9	< 0.1	< 0.1	< 0.1	40	< 0.05	0.14	0.6	< 0.05	0.03
E832340	2	23.1	2.66	0.26	7.24	2.54	1.09	< 0.1	24	8.9	251	2.01	5.2	3.1	0.6	1.1	0.3	< 10	< 0.05	1.53	3.5	0.55	0.04
E832341	31	< 0.5	0.01	0.16	0.12	0.02	3.35	0.1	3	5.3	97	0.13	< 0.1	5.3	< 0.1	< 0.1	< 0.1	60	< 0.05	0.10	0.4	< 0.05	0.06
E832342	34	0.7	0.05	0.17	0.46	0.06	3.19	0.2	6	11.0	435	0.18	0.2	22.8	0.3	0.1	< 0.1	110	< 0.05	0.24	1.5	0.10	0.05
E832343	26	< 0.5	0.02	0.13	0.21	0.04	3.45	0.2	3	6.6	147	0.20	0.1	7.1	< 0.1	< 0.1	< 0.1	50	< 0.05	0.20	0.6	< 0.05	0.03
E832344	24	< 0.5	0.02	0.22	0.68	0.03	2.10	< 0.1	119	35.9	89	0.53	0.1	12.2	1.9	0.9	0.7	20	< 0.05	0.22	0.4	1.52	0.04
E832345	23	< 0.5	0.02	0.09	0.14	0.02	2.85	0.1	6	5.4	54	0.09	< 0.1	3.2	0.1	< 0.1	< 0.1	30	< 0.05	0.07	0.4	0.08	0.04
E832346	17	< 0.5	0.02	0.19	0.18	0.03	2.44	0.1	4	7.2	69	0.13	0.1	3.3	< 0.1	< 0.1	< 0.1	40	< 0.05	0.11	0.4	< 0.05	0.03
E832347	28	< 0.5	0.02	0.14	0.15	0.03	3.59	< 0.1	3	4.4	70	0.08	< 0.1	12.6	< 0.1	< 0.1	< 0.1	40	< 0.05	0.12	0.4	< 0.05	0.03
E832348	28	< 0.5	0.01	0.08	0.16	0.03	2.73	0.1	3	5.1	83	0.12	< 0.1	3.6	< 0.1	< 0.1	< 0.1	30	< 0.05	0.15	0.5	< 0.05	0.03
E832349	29	< 0.5	0.02	0.13	0.27	0.03	3.39	0.1	5	8.3	343	0.52	0.1	10.1	0.1	< 0.1	< 0.1	40	< 0.05	0.13	1.5	0.05	0.04
E832350	4	6.0	1.41	1.35	5.49	2.28	2.93	< 0.1	73	62.5	522	3.40	1.2	24.9	1.3	0.9	0.5	< 10	1.04	15.1	15.0	0.59	0.99
E832351	21	< 0.5	0.01	0.07	0.12	0.02	0.89	< 0.1	3	22.0	54	0.08	< 0.1	1.9	< 0.1	< 0.1	< 0.1	30	< 0.05	0.05	0.3	< 0.05	0.02
E832352	29	< 0.5	0.02	0.29	0.31	0.02	4.40	0.1	4	12.2	251	0.23	< 0.1	23.3	0.2	< 0.1	< 0.1	50	< 0.05	0.23	1.9	0.08	0.03
E832353	28	< 0.5	0.02	0.11	0.40	0.03	3.98	0.2	5	12.5	281	0.31	0.1	31.8	0.2	0.1	< 0.1	40	< 0.05	0.18	1.6	0.10	0.03
E832354	27	< 0.5	0.02	0.13	0.41	0.03	2.58	0.1	3	5.6	82	0.20	< 0.1	4.0	0.1	< 0.1	< 0.1	40	< 0.05	0.10	0.4	< 0.05	0.03
E832355	26	0.6	0.03	0.16	0.77	0.04	3.45	0.3	8	15.9	119	0.25	0.1	129	0.8	0.1	0.3	80	0.05	0.44	2.1	0.45	0.04
E832356	23	< 0.5	< 0.01	0.04	0.10	0.02	1.10	< 0.1	3	4.0	71	0.05	< 0.1	5.2	< 0.1	< 0.1	< 0.1	20	< 0.05	< 0.05	0.3	< 0.05	0.02
E832357	14	< 0.5	0.02	0.05	0.25	0.04	1.44	0.1	4	8.4	41	0.16	0.1	4.1	< 0.1	< 0.1	< 0.1	30	< 0.05	0.14	0.4	< 0.05	0.03
E832358	32	< 0.5	0.02	0.23	0.19	0.03	3.62	< 0.1	3	5.0	179	0.25	< 0.1	2.6	< 0.1	< 0.1	< 0.1	60	< 0.05	0.15	0.5	< 0.05	0.03
E832359	28	< 0.5	0.02	0.20	0.60	0.04	4.19	0.2	12	15.1	3260	0.15	0.2	105	0.5	< 0.1	0.2	70	< 0.05	0.34	2.7	0.19	0.03
E832360	7	21.6	2.63	0.22	7.01	2.86	1.01	< 0.1	18	81.1	212	1.59	1.5	4.8	0.4	0.8	0.2	< 10	< 0.05	1.42	3.3	0.50	0.04
E832361	23	< 0.5	0.02	0.09	0.21	0.03	1.71	0.2	4	10.4	247	0.14	< 0.1	10.6	0.1	< 0.1	< 0.1	20	< 0.05	0.16	0.5	< 0.05	0.03
E832362	28	< 0.5	0.02	0.15	0.19	0.03	4.34	< 0.1	3	5.4	100	0.19	0.1	11.9	< 0.1	< 0.1	< 0.1	30	< 0.05	0.14	0.5	< 0.05	0.03
E832363	20	1.3	0.02	0.16	0.52	0.05	2.95	0.1	24	11.4	644	0.86	< 0.1	11.9	0.6	0.2	0.2	30	< 0.05	0.32	3.0	0.33	0.06
E832364	26	< 0.5	0.01	0.22	0.17	0.02	3.14	< 0.1	4	9.2	315	0.28	< 0.1	3.2	< 0.1	< 0.1	< 0.1	20	< 0.05	0.11	1.1	< 0.05	0.03
E832365	22	< 0.5	0.02	0.13	0.18	0.03	3.46	0.1	3	34.3	200	0.33	0.1	5.6	0.1	< 0.1	< 0.1	40	< 0.05	0.12	0.6	< 0.05	0.04
E832366	24	< 0.5	0.02	0.18	0.48	0.04	3.46	0.2	5	12.8	113	0.20	< 0.1	14.3	0.2	< 0.1	< 0.1	40	< 0.05	0.40	0.9	0.10	0.03
E832367	19	< 0.5	0.01	0.09	0.35	0.02	3.59	0.3	6	12.1	84	0.26	0.2	20.8	0.4	< 0.1	0.1	60	0.07	0.15	4.3	0.19	0.03
E832368	21	< 0.5	0.01	0.06	0.13	0.02	1.11	< 0.1	3	12.7	54	0.07	< 0.1	3.6	< 0.1	< 0.1	< 0.1	30	< 0.05	0.06	0.3	< 0.05	0.03
E832369	25	0.7	0.04	0.06	0.32	0.06	1.41	0.1	6	7.8	47	0.20	< 0.1	4.2	< 0.1	< 0.1	< 0.1	80	< 0.05	0.27	0.6	< 0.05	0.03
E832370	18	6.2	1.44	1.35	5.42	2.16	2.92	< 0.1	91	77.8	523	3.38	1.6	27.2	1.3	1.0	0.5	< 10	1.03	15.8	15.2	0.62	0.93
E832371	27	< 0.5	0.01	0.22	0.25	0.02	3.21	< 0.1	3	55.5	147	0.10	< 0.1	12.2	< 0.1	< 0.1	< 0.1	30	< 0.05	0.17	0.7	< 0.05	0.03
E832372	24	0.6	0.03	0.30	0.30	0.09	3.85	< 0.1	4	7.8	199	0.13	< 0.1	5.4	< 0.1	< 0.1	< 0.1	30	< 0.05	0.39	0.4	< 0.05	0.03
E832373	22	< 0.5	0.02	0.11	0.23	0.02	2.73	0.1	3	5.2	177	0.10	0.1	43.3	0.2	< 0.1	< 0.1	20	< 0.05	0.16	1.1	0.09	0.02
E832374	23	< 0.5	0.02	0.28	0.13	0.03	4.82	0.1	4	9.7	128	0.05	< 0.1	6.0	< 0.1	< 0.1	< 0.1	30	< 0.05	0.12	0.5	< 0.05	0.03
E832375	17	1.2	0.15	0.24	0.65	0.08	5.17	0.7	24	14.8	420	0.39	0.5	62.6	1.0	0.1	0.3	80	0.11	0.22	5.1	0.46	0.03
E832376	19	< 0.5	0.03	0.18	0.23	0.03	2.86	0.1	5	6.9	56	0.15	< 0.1	4.3	0.1	< 0.1	< 0.1	50	< 0.05	0.07	0.6	< 0.05	0.03
E832377	28	< 0.5	0.02	0.19	0.15	0.03	2.85	0.1	4	15.2	126	0.18	< 0.1	3.8	< 0.1	< 0.1	< 0.1	60	< 0.05	0.11	0.6	< 0.05	0.03
E832378	35	< 0.5	0.02	0.28	0.27	0.03	4.41	0.2	5	31.2	167	0.32	< 0.1	8.0	0.1	< 0.1	< 0.1	60	< 0.05	0.09	2.7	0.07	0.02
E832379	27	< 0.5	0.03	0.11	0.52	0.04	3.75	0.2	8	54.1	638	1.06	0.4	83.8	0.4	0.1	0.2	50	0.07	0.32	3.4	0.22	0.03
E832380	< 1	22.6	2.49	0.26	6.81	3.02	1.12	< 0.1	26	13.9	263	2.00	3.6	2.8	0.8	1.2	0.3	< 10	< 0.05	1.31	3.8	0.57	0.03

## Results

## Activation Laboratories Ltd.

## Report: A17-09668

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832381	11	1.0	0.04	0.17	0.66	0.09	4.39	0.3	13	13.6	105	0.67	0.5	30.6	0.5	0.2	0.2	40	< 0.05	0.68	1.7	0.28	0.06
E832382	20	< 0.5	0.02	0.23	0.22	0.03	4.99	0.1	5	7.4	262	0.75	0.2	5.6	< 0.1	< 0.1	< 0.1	20	< 0.05	0.12	0.4	0.05	0.02
E832383	19	< 0.5	0.02	0.30	0.23	0.02	4.95	0.3	7	19.1	149	0.15	< 0.1	7.1	0.1	< 0.1	< 0.1	30	< 0.05	0.12	0.9	0.05	0.02
E832384	13	< 0.5	0.02	0.12	0.26	0.03	4.00	0.2	9	9.5	127	0.52	0.2	19.6	0.2	< 0.1	< 0.1	20	< 0.05	0.18	0.7	0.09	0.02
E832385	17	< 0.5	0.02	0.24	0.48	0.05	2.98	0.6	9	47.0	120	0.42	0.2	100	0.4	< 0.1	0.1	80	< 0.05	0.30	2.1	0.19	0.03
E832386	21	< 0.5	0.01	0.05	0.20	0.02	1.14	0.1	4	9.5	27	0.15	< 0.1	4.1	< 0.1	< 0.1	< 0.1	50	< 0.05	0.08	0.4	< 0.05	0.03
E832387	24	6.1	1.12	0.23	3.36	0.77	2.58	0.1	26	29.7	852	1.20	0.5	14.5	0.6	0.6	0.2	50	< 0.05	1.24	2.4	0.38	0.07
E832388	36	0.7	0.03	0.30	0.28	0.05	4.75	0.2	6	5.9	390	0.72	0.2	6.5	0.1	< 0.1	< 0.1	50	< 0.05	0.16	2.0	< 0.05	0.03
E832389	27	0.6	0.03	0.30	0.31	0.04	6.06	0.2	7	9.3	174	0.16	< 0.1	16.9	< 0.1	< 0.1	< 0.1	40	< 0.05	0.21	0.7	0.05	0.02
E832390	< 1	6.0	1.43	1.28	5.35	2.03	2.79	< 0.1	75	56.7	500	3.27	1.0	25.2	1.3	0.9	0.5	< 10	1.05	15.3	14.1	0.58	0.76
E832391	20	< 0.5	0.02	0.27	0.18	0.03	3.94	0.1	5	12.5	121	0.14	< 0.1	38.4	< 0.1	< 0.1	< 0.1	20	< 0.05	0.20	1.0	< 0.05	0.03
E832392	16	< 0.5	0.02	0.24	0.20	0.03	3.50	0.1	4	7.0	75	0.09	< 0.1	2.1	< 0.1	< 0.1	< 0.1	20	< 0.05	0.12	0.5	< 0.05	0.03
E832393	17	< 0.5	0.02	0.40	0.20	0.04	3.46	< 0.1	4	5.7	130	0.17	< 0.1	18.4	< 0.1	< 0.1	< 0.1	10	< 0.05	0.23	0.4	< 0.05	0.03
E832394	8	< 0.5	0.02	0.09	0.31	0.02	4.44	0.3	7	6.3	189	0.25	0.1	20.6	0.3	< 0.1	< 0.1	20	0.05	0.13	6.9	0.12	0.02
E832395	15	0.5	0.03	0.09	0.85	0.04	2.70	1.2	8	15.7	564	0.42	0.3	45.4	0.9	0.2	0.3	150	0.23	0.23	5.2	0.81	0.04
E832396	39	0.5	0.03	0.29	0.21	0.04	4.83	0.2	4	5.4	374	0.18	< 0.1	4.1	0.1	< 0.1	< 0.1	50	< 0.05	0.16	0.6	0.07	0.03
E832397	28	< 0.5	0.01	0.17	0.19	0.03	2.45	< 0.1	4	4.2	50	0.08	< 0.1	1.7	< 0.1	< 0.1	< 0.1	40	< 0.05	0.07	0.3	< 0.05	0.03
E832398	27	7.6	0.29	0.71	1.29	0.17	4.61	0.5	18	117	176	0.77	< 0.1	31.4	0.3	0.3	0.1	60	0.05	0.40	5.8	0.15	0.06
E832399	12	1.2	0.06	0.12	0.91	0.07	2.52	0.6	15	26.7	167	0.69	0.3	21.8	0.6	0.2	0.2	50	0.08	0.31	7.7	0.28	0.06
E832400	< 1	19.1	2.56	0.29	7.61	3.24	1.17	< 0.1	27	71.2	245	2.00	0.5	4.4	0.7	1.0	0.3	< 10	< 0.05	1.09	3.8	0.62	0.03
E832401	8	0.6	0.03	0.10	0.66	0.05	2.43	0.3	7	14.8	249	0.68	0.2	25.8	0.6	< 0.1	0.2	50	< 0.05	0.30	1.3	0.25	0.04
E832402	15	< 0.5	0.02	0.15	0.19	0.02	3.41	0.1	4	7.3	141	0.25	< 0.1	15.9	0.1	< 0.1	< 0.1	30	< 0.05	0.12	0.6	< 0.05	0.04
E832403	18	< 0.5	0.02	0.31	0.21	0.03	5.49	0.5	5	4.9	278	0.25	< 0.1	4.3	< 0.1	< 0.1	< 0.1	30	< 0.05	0.12	0.6	0.05	0.05
E832404	16	< 0.5	0.03	0.35	0.42	0.04	5.69	0.3	8	6.9	142	0.15	< 0.1	5.6	0.1	< 0.1	< 0.1	40	0.08	0.13	0.8	0.07	0.03
E832405	11	0.7	0.03	0.25	0.45	0.05	4.44	0.4	16	11.2	242	0.35	< 0.1	11.8	0.3	0.1	0.1	40	0.11	0.22	2.3	0.14	0.05
E832406	18	11.7	1.53	0.53	4.23	0.62	3.00	0.2	33	26.4	310	1.45	1.7	12.0	0.8	0.7	0.3	40	< 0.05	1.15	5.2	0.47	0.06
E832407	17	0.6	0.03	0.13	0.30	0.04	2.54	0.1	5	9.7	203	0.54	0.2	6.7	< 0.1	< 0.1	< 0.1	60	< 0.05	0.17	1.4	0.05	0.03
E832408	28	< 0.5	0.02	0.09	0.33	0.03	3.63	0.1	4	21.2	124	0.31	0.1	10.9	0.3	0.1	< 0.1	50	< 0.05	0.26	2.6	0.11	0.03
E832409	29	< 0.5	0.02	0.17	0.46	0.03	4.30	0.1	3	8.7	277	0.10	0.1	27.6	0.2	< 0.1	< 0.1	40	< 0.05	0.16	0.8	0.11	0.05
E832410	< 1	5.9	1.41	1.28	5.33	2.18	2.68	< 0.1	63	65.7	499	3.29	1.2	26.2	1.3	0.9	0.5	10	1.05	15.4	15.2	0.56	0.66
E832411	17	< 0.5	0.02	0.12	0.16	0.03	2.23	< 0.1	3	5.7	126	0.16	< 0.1	3.6	< 0.1	< 0.1	< 0.1	40	< 0.05	0.13	0.4	< 0.05	0.03
E832412	13	< 0.5	0.02	0.11	0.48	0.03	3.46	0.3	5	26.3	245	0.20	0.1	33.8	0.4	< 0.1	0.1	30	< 0.05	0.22	2.1	0.27	0.03
E832413	17	< 0.5	0.02	0.21	0.27	0.03	4.14	0.2	6	10.9	215	0.53	0.1	8.4	0.1	< 0.1	< 0.1	30	< 0.05	0.14	1.5	0.07	0.04
E832414	19	< 0.5	0.02	0.14	0.45	0.02	3.91	0.3	6	8.9	146	0.15	0.2	14.0	0.4	0.1	0.1	40	< 0.05	0.24	0.7	0.21	< 0.02
E832415	21	< 0.5	0.02	0.12	0.20	0.03	3.88	0.2	5	6.8	176	0.19	0.1	24.9	0.1	< 0.1	< 0.1	50	< 0.05	0.19	0.8	0.06	0.03
E832416	24	< 0.5	0.02	0.08	0.17	0.02	1.76	0.1	3	8.3	47	0.10	< 0.1	8.7	< 0.1	< 0.1	< 0.1	40	< 0.05	0.10	0.5	< 0.05	0.03
E832417	29	0.8	0.03	0.14	0.35	0.06	3.62	0.4	13	14.1	208	0.81	0.3	10.7	0.2	0.2	< 0.1	40	< 0.05	0.30	0.5	0.11	0.04
E832418	19	0.7	0.03	0.28	0.43	0.04	4.22	0.3	11	14.5	54	0.29	0.2	8.6	0.2	< 0.1	< 0.1	50	0.09	0.22	0.7	0.11	0.03
E832419	3	1.0	0.09	0.10	1.26	0.07	3.23	0.9	16	19.2	265	0.77	< 0.1	61.2	1.2	0.3	0.4	70	0.45	0.23	6.9	0.85	0.06
E832420	< 1	19.5	2.67	0.27	6.68	3.46	1.15	< 0.1	26	10.2	258	2.11	1.5	3.0	0.7	1.1	0.3	< 10	< 0.05	1.45	3.8	0.59	0.04
E832421	18	< 0.5	0.02	0.15	0.19	0.03	1.74	0.1	4	7.1	61	0.14	< 0.1	5.1	0.1	< 0.1	< 0.1	30	< 0.05	0.09	0.5	0.07	0.04
E832438	14	< 0.5	0.02	0.04	0.22	0.03	0.50	< 0.1	5	6.1	82	0.32	< 0.1	5.5	0.1	< 0.1	< 0.1	40	0.07	0.07	1.2	< 0.05	0.03
E832439	11	< 0.5	0.02	0.24	0.72	0.04	2.46	0.4	9	32.3	336	0.30	0.2	123	0.3	0.1	0.1	80	< 0.05	0.38	4.0	0.16	0.04

Results

Activation Laboratories Ltd.

Report: A17-09668

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832440	13	19.0	2.44	0.26	6.79	2.74	1.09	< 0.1	24	112	257	2.09	8.5	5.8	0.9	0.9	0.4	< 10	< 0.05	1.37	15.4	0.66	0.04
GXR-1 Meas	15	7.6	0.03	0.20	2.10	0.03	0.81	2.7	76	13.6	866	24.1	0.5	38.0		0.9		3700	31.4	2.92	7.9	0.56	1350
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
GXR-1 Meas	< 1	8.0	0.04	0.22	2.30	0.04	0.84	3.0	84	11.5	905	24.8	0.4	37.4		0.9		3120	33.2	2.48	7.5	0.60	1430
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	7	10.8	0.45	1.59	5.24	1.76	0.85	0.3	84	59.5	155	2.95	1.3	40.6		1.8		60	3.47	2.36	14.1	0.91	18.2
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
GXR-4 Meas	< 1	11.2	0.53	1.74	6.63	4.06	0.93	0.4	92	42.3	150	3.17	1.3	38.1		2.0		170	3.46	2.22	13.7	1.32	19.3
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	37.1	1.46	1.08	9.00	1.52	1.06		45	58.1	899	4.92	1.0	39.7	3.5	3.0	1.2	< 10		3.85	18.8	1.38	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	22	35.8	1.62	1.10	8.53	2.70	1.05		69	51.6	866	4.98	1.3	33.2	3.4	3.0	1.2	20		3.37	17.5	1.39	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	5	39.1	0.09	0.70	1.00	1.46	0.16	0.1	183	60.3	1130	5.93	3.1	25.8		1.2		60	0.13	4.24	14.8	0.60	0.19
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
GXR-6 Meas	< 1	36.8	0.10	0.67	> 10.0	2.06	0.17	0.1	125	60.3	1140	6.47	2.1	27.6		1.1		60	0.25	3.82	14.5	0.61	0.20
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		5.0							149	193				270							57.0	0.52	
DNC-1a Cert		5.2							148	270				247							57	0.59	
DNC-1a Meas		4.7							156	185				263							57.7	0.52	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		174						0.4	220	77.2			3.0	82.5	3.3	3.3	1.2			7.97	22.7	1.70	0.67
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
SBC-1 Meas		177						0.5	242	83.4			3.8	88.1	3.4	3.3	1.2			7.37	22.9	1.75	0.72
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		22.3	0.09	0.19	7.68	0.44	0.19		105	585	471	15.2	2.3	243	1.3	0.7	0.4			3.45	29.6	0.53	0.37
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		22.0	0.09	0.20	8.16	0.42	0.18		88	507	487	15.4	1.5	229	1.3	0.8	0.5			3.15	29.6	0.52	0.39
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		20.0						5.6	27	64.8			2.8	50.6	2.6	6.8	0.9	1330		1.59	12.9	1.22	1.05
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		18.3						6.0	28	46.4			4.2	55.1	2.9	6.9	1.0	1110		1.62	13.9	1.24	1.09
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832338 Orig	31	< 0.5	0.01	0.13	0.18	0.03	3.83	< 0.1	3	9.1	89	0.09	< 0.1	7.4	< 0.1	< 0.1	< 0.1	40	< 0.05	0.11	0.5	< 0.05	0.04
E832338 Dup	34	< 0.5	0.02	0.13	0.20	0.05	3.63	< 0.1	3	7.2	87	0.10	< 0.1	7.3	< 0.1	< 0.1	< 0.1	30	< 0.05	0.12	0.5	< 0.05	0.02
E832347 Orig																							
E832347 Dup																							
E832357 Orig																							
E832357 Dup																							
E832367 Orig																							
E832367 Dup																							
E832376 Orig	19	< 0.5	0.03	0.18	0.23	0.03	2.86	0.1	5	6.9	56	0.15	< 0.1	4.3	0.1	< 0.1	< 0.1	50	< 0.05	0.07	0.6	< 0.05	0.03
E832376 Dup	21	< 0.5	0.02	0.18	0.20	0.02	2.94	0.1	5	7.9	55	0.14	< 0.1	4.4	0.1	< 0.1	< 0.1	40	< 0.05	0.08	0.6	< 0.05	0.03
E832378 Orig	35	< 0.5	0.02	0.28	0.27	0.03	4.41	0.2	5	31.2	167	0.32	< 0.1	8.0	0.1	< 0.1	< 0.1	60	< 0.05	0.09	2.7	0.07	0.02
E832378 Dup	34	< 0.5	0.02	0.25	0.25	0.03	4.10	0.3	5	4.3	163	0.30	< 0.1	7.5	0.1	< 0.1	< 0.1	50	< 0.05	0.08	2.5	0.07	0.02
E832382 Orig																							
E832382 Dup																							
E832392 Orig																							
E832392 Dup																							
E832402 Orig																							
E832402 Dup																							
E832414 Orig	19	< 0.5	0.02	0.14	0.45	0.02	3.91	0.3	6	8.9	146	0.15	0.2	14.0	0.4	0.1	0.1	40	< 0.05	0.24	0.7	0.21	< 0.02
E832414 Dup	21	< 0.5	0.02	0.14	0.42	0.03	4.00	0.3	6	9.3	156	0.15	0.2	14.6	0.4	< 0.1	0.1	50	0.05	0.25	0.7	0.21	< 0.02
E832417 Orig																							
E832417 Dup																							
E832419 Orig	3	1.0	0.09	0.10	1.26	0.07	3.23	0.9	16	19.2	265	0.77	< 0.1	61.2	1.2	0.3	0.4	70	0.45	0.23	6.9	0.85	0.06
E832419 Dup	4	0.9	0.05	0.12	1.07	0.06	3.22	0.9	16	16.5	243	0.78	< 0.1	59.9	1.2	0.3	0.4	80	0.42	0.23	7.1	0.85	0.06
Method Blank	19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.6	2	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	22	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	3.9	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	20	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	3.5	1	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	20	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	12	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.5	28	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	< 0.05	< 0.1	< 0.05	0.07

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi	
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
Method Blank																								
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832338	0.6	8.3	< 0.1	2.0	1.4	0.5	1	0.2	2.79	< 0.1	< 1	0.2	< 0.1	55	1.0	1.5	0.2	0.8	< 0.1	0.1	< 0.1	0.1	16.0
E832339	0.5	10.8	0.1	2.4	1.4	0.5	3	0.3	0.74	< 0.1	< 1	0.2	< 0.1	51	0.9	1.6	0.2	0.7	0.1	0.1	< 0.1	< 0.1	6.3
E832340	< 0.1	45.7	11.5	< 0.1	104	7.1	236	4.5	0.73	< 0.1	< 1	0.1	< 0.1	775	72.1	125	12.8	43.9	5.7	4.0	0.4	1.8	6.8
E832341	0.4	12.6	0.2	1.5	1.1	0.5	3	0.3	0.36	< 0.1	< 1	0.2	< 0.1	34	0.9	1.5	0.2	0.7	0.1	0.1	< 0.1	0.1	6.9
E832342	0.6	30.9	< 0.1	2.6	3.0	2.4	7	0.8	1.21	< 0.1	< 1	0.8	< 0.1	146	3.1	4.5	0.8	3.0	0.5	0.5	< 0.1	0.4	18.9
E832343	0.5	19.2	< 0.1	1.4	1.7	0.7	4	0.4	0.31	< 0.1	< 1	0.2	< 0.1	75	1.2	2.2	0.3	1.1	0.2	0.1	< 0.1	0.1	7.5
E832344	0.2	10.0	0.6	0.2	1.5	21.2	8	1.5	0.66	< 0.1	< 1	0.2	< 0.1	43	138	243	23.1	83.1	10.1	8.2	0.8	4.6	5.0
E832345	0.2	10.4	< 0.1	0.8	1.1	1.1	2	0.3	0.74	< 0.1	< 1	0.2	< 0.1	42	5.8	10.1	1.0	3.5	0.4	0.4	< 0.1	0.2	3.7
E832346	0.2	10.4	0.2	0.9	1.1	0.7	4	0.3	0.40	< 0.1	< 1	0.2	< 0.1	34	2.2	3.9	0.4	1.5	0.2	0.2	< 0.1	0.2	3.5
E832347	0.4	6.3	< 0.1	3.2	1.1	0.8	3	0.3	0.47	< 0.1	< 1	0.4	< 0.1	70	1.6	2.3	0.3	1.1	0.2	0.2	< 0.1	0.1	7.8
E832348	0.5	11.0	< 0.1	1.0	1.3	0.6	3	0.3	0.66	< 0.1	< 1	0.2	< 0.1	47	1.2	1.9	0.2	0.9	0.2	0.1	< 0.1	0.1	5.6
E832349	0.8	12.7	< 0.1	2.7	1.5	1.2	4	0.4	1.05	< 0.1	< 1	0.4	< 0.1	78	3.1	4.5	0.5	2.0	0.2	0.3	< 0.1	0.2	9.6
E832350	0.1	46.9	14.1	5.8	584	11.8	44	< 0.1	0.69	< 0.1	< 1	< 0.1	< 0.1	48	4.0	9.0	1.2	6.1	1.7	2.1	0.4	2.6	34.1
E832351	0.3	11.2	0.3	0.4	0.9	0.4	< 1	0.2	0.27	< 0.1	< 1	0.2	< 0.1	28	0.8	1.4	0.2	0.6	< 0.1	< 0.1	< 0.1	< 0.1	1.7
E832352	0.6	7.9	< 0.1	1.8	1.3	1.6	< 1	0.3	0.79	< 0.1	< 1	2.1	< 0.1	71	2.7	3.6	0.6	2.1	0.3	0.3	< 0.1	0.3	22.1
E832353	0.9	5.9	< 0.1	6.7	1.4	2.4	4	0.4	0.49	< 0.1	< 1	1.3	< 0.1	68	2.5	3.2	0.6	2.6	0.3	0.4	< 0.1	0.4	46.7
E832354	0.3	6.0	< 0.1	0.9	1.6	0.8	3	0.4	0.41	< 0.1	< 1	0.2	< 0.1	52	1.2	2.4	0.3	1.2	0.2	0.2	< 0.1	0.2	4.6
E832355	1.2	10.9	< 0.1	22.2	2.1	8.3	7	0.5	0.64	< 0.1	< 1	1.4	< 0.1	116	23.8	16.4	4.4	16.7	2.5	2.2	0.2	1.4	101
E832356	0.3	3.9	0.1	0.2	0.6	0.6	< 1	0.2	0.37	< 0.1	< 1	0.1	< 0.1	24	1.3	1.4	0.3	0.9	0.2	0.1	< 0.1	< 0.1	5.9
E832357	0.5	4.6	0.5	0.6	1.4	0.9	5	0.6	0.28	< 0.1	< 1	0.2	< 0.1	40	1.6	2.7	0.3	1.3	0.2	0.2	< 0.1	0.2	2.9
E832358	0.6	5.7	0.3	1.4	1.4	0.6	4	0.3	0.44	< 0.1	< 1	0.1	< 0.1	46	1.3	2.1	0.2	0.9	< 0.1	0.2	< 0.1	0.1	3.6
E832359	2.2	4.6	< 0.1	13.1	1.9	5.3	8	0.5	0.82	< 0.1	< 1	4.1	< 0.1	85	4.4	4.2	1.0	4.3	0.7	0.9	0.1	0.8	93.2
E832360	< 0.1	37.3	9.9	< 0.1	102	4.6	96	1.4	0.68	< 0.1	< 1	0.1	< 0.1	789	59.0	102	10.3	35.3	3.9	3.1	0.3	1.3	7.4
E832361	0.6	12.7	0.3	1.3	1.4	1.1	2	0.4	0.35	< 0.1	< 1	0.4	< 0.1	51	1.4	2.4	0.3	1.2	0.1	0.2	< 0.1	0.2	9.1
E832362	0.5	12.5	< 0.1	2.7	1.5	0.8	4	0.4	0.31	< 0.1	< 1	0.2	< 0.1	75	1.1	1.9	0.3	1.0	< 0.1	0.2	< 0.1	0.1	9.8
E832363	0.5	7.5	0.4	8.5	2.7	7.8	10	0.5	1.31	< 0.1	< 1	0.2	< 0.1	77	16.0	35.4	3.1	12.5	2.0	1.8	0.2	1.2	9.7
E832364	0.4	6.2	< 0.1	10.5	1.0	0.9	4	0.2	0.51	< 0.1	< 1	0.2	< 0.1	34	1.6	2.9	0.3	1.2	0.2	0.2	< 0.1	0.2	4.0
E832365	0.7	10.2	0.2	1.0	1.4	1.0	4	0.4	0.55	< 0.1	< 1	0.2	< 0.1	56	2.0	4.5	0.4	1.4	0.3	0.2	< 0.1	0.2	10.4
E832366	0.6	5.5	0.2	1.4	2.1	1.8	3	0.5	0.42	< 0.1	< 1	0.6	< 0.1	59	4.4	6.1	0.8	3.2	0.5	0.4	< 0.1	0.4	12.6
E832367	1.6	8.5	< 0.1	3.3	1.3	3.6	6	0.3	0.68	< 0.1	< 1	0.4	< 0.1	86	5.2	5.3	1.3	5.3	0.8	0.8	< 0.1	0.7	56.0
E832368	0.3	6.2	0.2	1.4	0.7	0.5	2	0.2	0.53	< 0.1	< 1	0.2	< 0.1	27	0.9	1.3	0.2	0.7	< 0.1	< 0.1	< 0.1	< 0.1	3.3
E832369	0.5	10.0	0.6	1.3	2.3	1.0	2	0.5	0.43	< 0.1	< 1	0.1	< 0.1	42	1.7	3.2	0.4	1.4	0.2	0.2	< 0.1	0.2	3.4
E832370	0.1	45.4	14.8	5.9	591	12.6	59	< 0.1	3.07	< 0.1	< 1	< 0.1	< 0.1	51	4.1	9.3	1.3	6.3	1.9	2.2	0.4	2.5	37.7
E832371	0.5	4.1	< 0.1	0.9	1.1	0.8	2	0.3	0.33	< 0.1	< 1	0.3	< 0.1	44	1.6	2.2	0.4	1.2	0.2	0.2	< 0.1	0.2	8.3



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832372	0.6	5.9	0.4	1.1	3.7	0.9	4	0.5	0.72	< 0.1	< 1	0.3	< 0.1	66	1.6	2.9	0.4	1.5	0.2	0.2	< 0.1	0.2	3.1
E832373	0.7	17.9	< 0.1	20.5	1.1	2.1	4	0.2	0.84	< 0.1	< 1	0.4	< 0.1	65	4.1	2.3	0.8	3.1	0.5	0.4	< 0.1	0.3	55.3
E832374	0.6	11.8	< 0.1	1.6	1.3	0.4	< 1	0.2	3.16	< 0.1	< 1	0.2	< 0.1	46	0.7	1.2	0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1	6.9
E832375	6.2	22.2	0.8	9.8	3.1	11.5	19	0.7	1.44	< 0.1	< 1	1.4	< 0.1	101	16.8	5.4	3.5	14.5	2.0	2.0	0.2	1.5	415
E832376	1.0	4.6	0.3	0.1	1.1	1.3	1	0.3	0.75	< 0.1	< 1	0.2	< 0.1	37	1.8	2.0	0.4	1.5	0.2	0.2	< 0.1	0.2	25.3
E832377	0.4	9.0	0.2	2.3	1.1	0.7	2	0.3	0.73	< 0.1	< 1	0.1	< 0.1	37	1.2	1.8	0.2	1.0	0.2	0.2	< 0.1	0.1	7.2
E832378	0.7	13.3	< 0.1	0.6	1.1	1.3	3	0.3	2.34	< 0.1	< 1	0.3	< 0.1	97	3.3	5.7	0.7	2.5	0.3	0.3	< 0.1	0.2	11.5
E832379	1.7	9.3	< 0.1	116	1.9	5.3	17	0.5	1.37	< 0.1	< 1	0.8	< 0.1	159	9.0	6.3	1.8	7.2	1.2	1.1	0.1	0.9	108
E832380	< 0.1	48.8	9.9	< 0.1	127	8.6	205	4.5	2.05	< 0.1	< 1	< 0.1	< 0.1	837	63.4	125	12.5	44.7	6.3	4.1	0.4	2.2	7.1
E832381	2.8	5.5	0.8	4.0	4.4	5.7	19	1.1	1.98	< 0.1	< 1	0.8	< 0.1	103	14.9	18.4	2.8	10.6	1.5	1.3	0.2	1.0	50.8
E832382	0.9	7.7	< 0.1	12.7	1.4	1.1	8	0.9	3.33	< 0.1	< 1	0.2	< 0.1	80	2.2	3.5	0.5	1.8	0.2	0.2	< 0.1	0.2	10.3
E832383	0.7	19.5	< 0.1	0.8	1.4	1.0	1	0.2	0.63	< 0.1	< 1	0.4	< 0.1	64	2.3	4.0	0.5	1.8	0.3	0.2	< 0.1	0.2	11.2
E832384	1.0	6.9	< 0.1	3.9	1.4	1.8	6	0.4	0.71	< 0.1	< 1	0.2	< 0.1	73	3.8	5.7	0.8	3.0	0.6	0.4	< 0.1	0.3	21.6
E832385	1.9	5.2	< 0.1	11.1	2.0	5.1	7	0.5	0.53	< 0.1	< 1	3.0	< 0.1	95	9.6	4.5	1.8	6.7	0.9	0.9	0.1	0.7	72.9
E832386	0.6	4.8	0.4	0.8	1.0	0.7	2	0.4	0.33	< 0.1	< 1	0.2	< 0.1	34	1.4	2.3	0.3	1.1	0.2	0.2	< 0.1	0.1	3.6
E832387	0.8	18.2	5.0	19.7	26.9	5.2	25	2.4	0.58	< 0.1	< 1	0.2	< 0.1	271	13.7	26.3	2.7	10.3	1.6	1.3	0.2	1.1	17.0
E832388	1.0	13.1	< 0.1	4.8	2.3	1.1	6	0.7	5.82	< 0.1	< 1	0.2	< 0.1	206	1.9	3.5	0.4	1.5	0.3	0.2	< 0.1	0.2	16.0
E832389	1.3	24.3	< 0.1	1.9	2.1	1.1	< 1	0.3	0.85	< 0.1	< 1	1.1	< 0.1	88	2.3	3.7	0.4	1.8	0.3	0.2	< 0.1	0.2	11.5
E832390	< 0.1	44.0	14.2	5.7	563	11.7	40	< 0.1	0.65	< 0.1	< 1	< 0.1	< 0.1	50	4.0	8.6	1.3	6.2	1.5	2.2	0.3	2.5	32.8
E832391	0.7	15.3	< 0.1	4.6	1.4	0.8	2	0.3	0.39	< 0.1	< 1	0.5	< 0.1	78	1.4	2.1	0.3	1.2	0.2	0.2	< 0.1	0.2	10.9
E832392	0.6	4.3	0.2	< 0.1	1.3	0.6	1	0.3	0.45	< 0.1	< 1	0.1	< 0.1	44	1.1	2.0	0.2	0.9	0.2	0.1	< 0.1	0.1	3.3
E832393	0.6	8.9	0.2	3.2	1.5	0.9	4	0.5	0.29	< 0.1	< 1	0.3	< 0.1	56	1.3	2.3	0.3	1.2	0.2	0.2	< 0.1	0.2	4.7
E832394	1.5	4.1	< 0.1	2.7	1.1	3.0	5	0.3	0.59	< 0.1	< 1	0.7	0.1	123	3.0	3.5	0.8	3.2	0.5	0.5	< 0.1	0.5	76.0
E832395	1.4	10.5	< 0.1	23.0	2.0	9.5	10	0.5	0.66	< 0.1	< 1	0.2	< 0.1	102	43.8	56.7	8.2	30.8	4.2	3.6	0.4	1.9	154
E832396	0.5	6.6	< 0.1	1.5	1.7	1.1	3	0.3	3.81	< 0.1	< 1	0.1	< 0.1	118	3.5	5.1	0.7	2.6	0.5	0.3	< 0.1	0.2	11.2
E832397	0.4	4.2	0.4	0.1	1.0	0.7	< 1	0.3	0.75	< 0.1	< 1	0.1	< 0.1	34	1.5	2.4	0.3	1.2	0.1	0.2	< 0.1	0.1	3.9
E832398	1.0	11.7	1.7	2.0	6.5	2.9	3	0.9	0.47	< 0.1	< 1	0.3	< 0.1	127	6.5	8.4	1.3	4.5	0.6	0.6	< 0.1	0.6	49.7
E832399	1.4	11.9	0.8	13.4	3.3	5.6	11	0.9	0.82	< 0.1	< 1	0.4	< 0.1	86	12.0	17.7	2.5	9.4	1.5	1.3	0.2	1.0	73.8
E832400	< 0.1	47.0	11.8	< 0.1	119	8.2	69	1.9	0.93	< 0.1	< 1	< 0.1	< 0.1	828	71.5	129	14.1	51.3	6.9	4.7	0.4	2.2	7.2
E832401	1.4	12.8	< 0.1	4.0	2.7	5.9	9	0.7	0.70	< 0.1	< 1	0.5	< 0.1	95	7.9	8.7	1.8	7.1	1.2	1.1	0.1	0.9	114
E832402	0.8	10.5	< 0.1	4.0	1.1	1.0	3	0.3	0.37	< 0.1	< 1	0.2	< 0.1	62	1.6	2.1	0.4	1.5	0.2	0.2	< 0.1	0.2	19.8
E832403	1.0	29.3	< 0.1	1.8	1.4	0.9	3	0.4	3.44	< 0.1	< 1	0.2	< 0.1	112	1.9	3.2	0.4	1.6	0.3	0.3	< 0.1	0.2	16.2
E832404	1.1	19.9	0.1	0.6	2.2	1.2	< 1	0.3	0.70	< 0.1	< 1	0.7	< 0.1	87	2.5	4.0	0.5	2.0	0.2	0.3	< 0.1	0.2	10.5
E832405	1.8	12.4	0.3	6.3	2.4	2.9	3	0.5	0.86	< 0.1	< 1	0.3	< 0.1	100	9.1	15.1	1.7	6.0	0.8	0.7	< 0.1	0.5	27.0
E832406	0.7	59.1	7.8	1.9	21.4	6.8	64	4.8	0.85	< 0.1	< 1	0.2	< 0.1	259	16.7	28.1	3.4	12.4	1.8	1.7	0.2	1.4	10.4
E832407	0.8	11.9	0.3	2.8	1.9	1.1	6	0.5	1.51	< 0.1	< 1	0.1	< 0.1	52	1.9	3.5	0.4	1.6	0.2	0.3	< 0.1	0.2	3.4
E832408	0.7	6.5	< 0.1	2.2	1.7	2.4	5	0.4	0.80	< 0.1	< 1	0.2	< 0.1	94	3.2	4.3	0.8	3.1	0.6	0.5	< 0.1	0.4	27.2
E832409	0.8	10.2	< 0.1	2.4	2.2	1.7	4	0.3	1.10	< 0.1	< 1	0.8	< 0.1	126	3.5	4.7	0.9	3.3	0.6	0.4	< 0.1	0.3	19.1
E832410	< 0.1	48.1	14.7	5.7	605	12.1	45	< 0.1	0.64	< 0.1	< 1	< 0.1	< 0.1	55	4.1	9.0	1.3	6.2	1.7	2.2	0.4	2.4	34.9
E832411	0.3	8.9	0.2	0.3	1.3	0.6	3	0.3	0.65	< 0.1	< 1	0.1	< 0.1	49	1.1	1.7	0.2	0.9	< 0.1	0.1	< 0.1	< 0.1	2.9
E832412	1.4	8.6	0.1	10.0	2.2	4.7	6	0.5	0.63	< 0.1	< 1	0.3	< 0.1	93	12.6	13.1	2.4	9.2	1.5	1.2	0.1	0.8	50.4
E832413	0.8	7.8	0.3	3.7	1.7	1.3	5	0.5	0.65	< 0.1	< 1	0.1	< 0.1	55	3.7	5.9	0.7	2.6	0.4	0.3	< 0.1	0.2	5.2
E832414	1.3	6.7	< 0.1	10.6	1.6	4.1	6	0.3	0.51	< 0.1	< 1	0.5	< 0.1	85	8.8	8.8	1.7	6.7	1.0	0.9	0.1	0.6	92.9

Results

Activation Laboratories Ltd.

Report: A17-09668

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832415	0.9	8.9	< 0.1	4.8	1.4	1.3	5	0.4	0.81	< 0.1	< 1	0.3	< 0.1	91	2.1	2.6	0.5	1.9	0.2	0.3	< 0.1	0.2	27.7
E832416	0.5	7.4	0.2	0.3	0.9	0.6	< 1	0.2	0.44	< 0.1	< 1	0.4	< 0.1	43	1.0	1.7	0.2	0.9	< 0.1	0.2	< 0.1	0.1	5.0
E832417	1.0	13.1	0.4	3.7	3.0	2.2	11	0.8	0.96	< 0.1	< 1	0.1	< 0.1	71	4.2	8.3	0.9	3.9	0.5	0.5	< 0.1	0.4	15.4
E832418	1.3	12.6	1.0	1.8	1.8	2.1	6	0.6	4.67	< 0.1	< 1	0.3	< 0.1	69	7.6	10.8	1.4	4.8	0.7	0.5	< 0.1	0.4	20.1
E832419	3.0	24.1	0.9	12.4	3.3	13.9	2	0.8	0.93	< 0.1	< 1	0.8	< 0.1	151	51.8	71.8	9.5	34.9	4.6	3.9	0.4	2.4	349
E832420	0.2	49.2	10.9	< 0.1	139	7.7	132	2.1	0.94	< 0.1	< 1	< 0.1	< 0.1	934	64.1	125	11.9	43.4	5.8	3.8	0.4	1.8	6.5
E832421	0.5	7.0	0.3	0.8	1.2	1.1	1	0.3	0.34	< 0.1	< 1	0.2	< 0.1	40	3.4	5.1	0.6	2.4	0.4	0.3	< 0.1	0.2	19.0
E832438	0.4	8.8	0.3	1.2	1.2	0.9	1	0.4	0.68	< 0.1	< 1	0.1	< 0.1	47	2.7	4.4	0.5	1.8	0.3	0.2	< 0.1	0.2	8.2
E832439	0.9	3.8	0.2	7.2	2.0	3.7	7	0.6	0.95	< 0.1	< 1	3.6	< 0.1	98	7.4	8.6	1.4	5.6	0.6	0.7	< 0.1	0.6	47.0
E832440	0.2	53.6	10.8	< 0.1	122	10.0	330	5.5	1.20	< 0.1	6	0.2	< 0.1	894	76.4	139	14.6	53.4	6.8	5.2	0.5	2.5	62.0
GXR-1 Meas	15.3	758	4.2	425	2.7	26.5	24	0.8	18.8	0.8	31	22.4	7.5	714	7.8	15.7		9.1	2.5	4.0	0.7	4.7	1120
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
GXR-1 Meas	18.3	689	2.2	437	3.1	28.8	19	0.5	20.1	0.8	32	32.8	10.2	705	8.4	15.6		9.4	2.7	4.1	0.7	4.9	1080
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	6.1	69.9	18.6	105	71.8	8.9	44	10.7	315	0.2	8	4.7	0.9	111	37.3	84.5		29.8	3.1	3.4	0.3	1.9	6340
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	6.5	69.6	17.4	106	153	12.2	46	9.5	330	0.2	8	4.6	0.9	87	59.8	105		42.7	5.9	4.6	0.5	2.7	6160
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		106	18.1	< 0.1	88.2		38	0.1			< 1	< 0.1		642	39.9	89.9		40.6	7.1	6.9	0.9	6.2	30.7
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		99.0	16.6	< 0.1	127		49	< 0.1			< 1	< 0.1		631	43.1	85.7		40.6	6.7	6.6	0.9	6.2	28.8
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	0.5	136	20.8	316	69.1	11.7	110	4.1	1.45	< 0.1	< 1	2.1	< 0.1	1180	13.1	36.7		13.3	2.4	2.5	0.3	2.5	73.7
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
GXR-6 Meas	0.9	133	21.2	259	89.2	12.6	76	0.1	0.44	< 0.1	< 1	0.7	< 0.1	1270	14.0	35.6		13.3	2.7	2.4	0.3	2.4	76.1
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		69.3	14.2		4.3	16.4	41	1.6				0.5		108	3.8			5.3					100
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		62.5	13.2		3.7	15.9	42	1.7				0.6		104	3.9			5.0					99.0
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		207	22.5	22.3	102	28.9	117	10.2	2.20		3	0.8		683	49.5	110	11.1	49.4	8.3	8.1	1.0	6.5	31.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		186	24.3	27.2	154	30.5	136	15.6	2.50		4	1.1		484	56.7	108	12.5	51.1	8.5	7.7	1.0	6.5	32.1
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		43.3	22.2	5.3	46.9	11.0	89	0.2	0.34	< 0.1	< 1	< 0.1		187	16.7	33.9	3.6	14.6	2.6	2.5	0.4	2.2	380
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 45d (4-Acid) Meas		43.1	20.2	5.6	41.7	10.3	57	< 0.1	0.28	< 0.1	< 1	< 0.1		181	18.3	35.9	3.7	14.7	2.1	2.5	0.3	2.4	374
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		816	10.8		122	24.1	100	3.1	12.2					979	46.4	90.8	10.0	40.2	6.9	5.7	0.8	4.6	248
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.00
SdAR-M2 (U.S.G.S.) Meas		809	9.9		166	24.5	133	4.3	13.3					1070	47.5	96.4	10.0	38.5	6.2	5.7	0.8	4.8	265
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.00
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832338 Orig	0.6	8.3	< 0.1	2.0	1.4	0.5	1	0.2	2.79	< 0.1	< 1	0.2	< 0.1	55	1.0	1.5	0.2	0.8	< 0.1	0.1	< 0.1	0.1	16.0
E832338 Dup	0.4	6.3	< 0.1	1.4	1.8	0.5	1	0.3	0.40	< 0.1	< 1	0.2	< 0.1	56	0.8	1.3	0.2	0.7	< 0.1	0.1	< 0.1	0.1	9.1
E832347 Orig																							
E832347 Dup																							
E832357 Orig																							
E832357 Dup																							
E832367 Orig																							
E832367 Dup																							
E832376 Orig	1.0	4.6	0.3	0.1	1.1	1.3	1	0.3	0.75	< 0.1	< 1	0.2	< 0.1	37	1.8	2.0	0.4	1.5	0.2	0.2	< 0.1	0.2	25.3
E832376 Dup	0.9	4.4	0.3	0.5	1.0	1.2	1	0.3	0.68	< 0.1	< 1	0.2	< 0.1	35	1.9	2.2	0.4	1.5	0.2	0.2	< 0.1	0.2	23.0
E832378 Orig	0.7	13.3	< 0.1	0.6	1.1	1.3	3	0.3	2.34	< 0.1	< 1	0.3	< 0.1	97	3.3	5.7	0.7	2.5	0.3	0.3	< 0.1	0.2	11.5
E832378 Dup	0.5	13.2	< 0.1	0.6	1.0	1.2	5	0.3	2.03	< 0.1	< 1	0.2	< 0.1	90	3.1	5.4	0.7	2.3	0.3	0.3	< 0.1	0.2	10.6
E832382 Orig																							
E832382 Dup																							
E832392 Orig																							
E832392 Dup																							
E832402 Orig																							
E832402 Dup																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832414 Orig	1.3	6.7	< 0.1	10.6	1.6	4.1	6	0.3	0.51	< 0.1	< 1	0.5	< 0.1	85	8.8	8.8	1.7	6.7	1.0	0.9	0.1	0.6	92.9
E832414 Dup	1.0	7.6	< 0.1	3.7	1.6	4.1	6	0.3	0.50	< 0.1	< 1	0.5	< 0.1	84	8.8	8.8	1.7	6.7	0.9	0.9	0.1	0.7	92.7
E832417 Orig																							
E832417 Dup																							
E832419 Orig	3.0	24.1	0.9	12.4	3.3	13.9	2	0.8	0.93	< 0.1	< 1	0.8	< 0.1	151	51.8	71.8	9.5	34.9	4.6	3.9	0.4	2.4	349
E832419 Dup	3.2	27.4	0.3	12.3	3.1	14.0	2	0.8	0.95	< 0.1	< 1	0.8	< 0.1	149	52.7	70.5	9.5	34.7	4.7	3.8	0.4	2.4	357
Method Blank	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.3	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.4	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.20	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.6
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832338	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	32.6	0.1	0.004	< 0.05	2.0	0.4	0.1	0.007
E832339	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	29.7	0.1	< 0.001	< 0.05	1.4	0.3	0.1	< 0.005
E832340	< 0.1	< 0.1	0.6	< 0.1	< 0.1	202	0.5	< 0.001	0.86	36.1	40.4	2.6	< 0.005
E832341	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	49.6	0.1	< 0.001	< 0.05	1.1	0.4	0.1	< 0.005
E832342	< 0.1	< 0.1	0.3	< 0.1	< 0.1	53.2	0.2	< 0.001	0.10	1.8	1.7	0.4	0.008
E832343	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.9	0.1	< 0.001	< 0.05	0.9	0.6	0.2	0.008
E832344	< 0.1	0.3	1.9	0.2	< 0.1	31.2	0.5	< 0.001	< 0.05	2.1	10.1	1.2	< 0.005
E832345	< 0.1	< 0.1	0.1	< 0.1	< 0.1	23.6	0.3	< 0.001	< 0.05	1.3	0.6	0.1	0.009
E832346	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	30.9	< 0.1	< 0.001	< 0.05	0.6	0.5	0.7	0.010
E832347	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	34.7	< 0.1	< 0.001	< 0.05	0.7	0.4	0.1	< 0.005
E832348	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	29.3	< 0.1	< 0.001	< 0.05	0.7	0.4	0.1	0.005
E832349	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.2	0.1	0.002	< 0.05	1.2	0.6	0.3	< 0.005
E832350	< 0.1	0.2	1.3	0.2	< 0.1	84.0	< 0.1	< 0.001	5.21	8.9	0.7	0.3	3.47
E832351	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	16.7	< 0.1	< 0.001	< 0.05	1.0	0.2	< 0.1	0.037
E832352	< 0.1	< 0.1	0.2	< 0.1	< 0.1	58.0	0.1	< 0.001	0.06	< 0.5	1.1	0.3	0.012
E832353	< 0.1	< 0.1	0.3	< 0.1	< 0.1	33.5	0.1	0.002	< 0.05	0.7	1.2	0.3	0.012
E832354	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	37.5	< 0.1	< 0.001	< 0.05	0.7	0.4	0.1	0.096
E832355	< 0.1	0.1	0.8	0.1	< 0.1	38.5	0.2	0.002	0.22	1.3	3.6	0.8	0.006
E832356	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	12.0	< 0.1	< 0.001	< 0.05	1.1	0.3	< 0.1	< 0.005
E832357	< 0.1	< 0.1	0.1	< 0.1	< 0.1	25.1	0.2	< 0.001	< 0.05	0.9	0.6	0.2	0.005
E832358	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	44.0	0.1	< 0.001	< 0.05	0.9	0.4	0.1	< 0.005
E832359	< 0.1	< 0.1	0.6	0.1	< 0.1	42.3	0.5	0.003	0.20	0.9	1.5	0.7	0.012
E832360	< 0.1	< 0.1	0.4	< 0.1	< 0.1	203	0.3	< 0.001	0.82	38.7	35.9	2.7	< 0.005

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832361	< 0.1	< 0.1	0.1	< 0.1	< 0.1	28.5	0.1	< 0.001	< 0.05	1.0	0.5	0.2	< 0.005
E832362	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	41.4	0.1	< 0.001	< 0.05	0.6	0.5	0.1	< 0.005
E832363	< 0.1	< 0.1	0.6	< 0.1	< 0.1	39.3	0.7	< 0.001	< 0.05	1.7	2.8	1.0	0.005
E832364	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	37.5	0.1	< 0.001	< 0.05	0.6	0.3	0.1	< 0.005
E832365	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.4	0.1	< 0.001	< 0.05	1.0	1.0	2.4	0.007
E832366	< 0.1	< 0.1	0.2	< 0.1	< 0.1	38.7	0.1	< 0.001	< 0.05	0.7	1.4	0.5	0.006
E832367	< 0.1	< 0.1	0.4	< 0.1	< 0.1	26.5	0.1	0.007	0.09	0.8	2.5	0.6	0.008
E832368	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	15.8	< 0.1	< 0.001	< 0.05	0.6	0.3	< 0.1	< 0.005
E832369	< 0.1	< 0.1	0.1	< 0.1	< 0.1	24.5	0.1	< 0.001	< 0.05	1.0	0.7	0.2	< 0.005
E832370	< 0.1	0.2	1.3	0.2	< 0.1	90.8	< 0.1	0.003	5.35	9.1	0.7	0.2	3.22
E832371	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.9	< 0.1	< 0.001	< 0.05	< 0.5	0.6	0.4	0.012
E832372	< 0.1	< 0.1	0.1	< 0.1	< 0.1	51.0	0.1	< 0.001	0.05	1.2	0.7	0.2	0.005
E832373	< 0.1	< 0.1	0.2	< 0.1	< 0.1	25.8	< 0.1	0.002	0.14	0.6	0.8	0.5	0.014
E832374	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.8	< 0.1	0.002	< 0.05	0.6	0.2	0.1	< 0.005
E832375	< 0.1	0.1	1.1	0.2	< 0.1	46.5	0.2	0.008	0.24	1.2	2.4	10.1	0.012
E832376	< 0.1	< 0.1	0.1	< 0.1	< 0.1	30.0	0.1	0.001	< 0.05	0.7	0.4	0.7	< 0.005
E832377	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	40.4	< 0.1	< 0.001	< 0.05	0.7	0.3	0.2	< 0.005
E832378	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.0	0.1	< 0.001	0.05	0.5	1.4	3.4	< 0.005
E832379	< 0.1	< 0.1	0.5	< 0.1	< 0.1	34.1	0.2	0.005	0.19	0.9	2.3	0.9	0.010
E832380	< 0.1	0.1	0.7	0.1	< 0.1	199	0.6	< 0.001	0.93	38.4	42.9	2.7	< 0.005
E832381	< 0.1	< 0.1	0.5	< 0.1	< 0.1	38.4	0.3	0.003	0.11	2.2	2.7	9.8	< 0.005
E832382	< 0.1	< 0.1	0.1	< 0.1	< 0.1	48.0	0.2	0.003	< 0.05	< 0.5	1.1	2.4	0.005
E832383	< 0.1	< 0.1	0.1	< 0.1	< 0.1	42.7	0.1	< 0.001	< 0.05	< 0.5	0.9	0.7	< 0.005
E832384	< 0.1	< 0.1	0.2	< 0.1	< 0.1	37.4	0.1	0.001	< 0.05	0.5	1.3	0.4	< 0.005
E832385	< 0.1	< 0.1	0.5	< 0.1	< 0.1	39.5	0.2	0.005	0.14	1.3	1.7	0.8	0.007
E832386	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	20.6	< 0.1	< 0.001	< 0.05	0.7	0.4	0.1	< 0.005
E832387	< 0.1	< 0.1	0.6	< 0.1	< 0.1	148	0.3	0.001	0.17	7.5	4.0	0.9	0.010
E832388	< 0.1	< 0.1	0.1	< 0.1	< 0.1	54.4	0.3	0.003	< 0.05	1.0	0.8	8.0	0.015
E832389	< 0.1	< 0.1	0.1	< 0.1	< 0.1	59.0	0.1	< 0.001	< 0.05	0.9	0.7	5.2	< 0.005
E832390	< 0.1	0.2	1.3	0.2	< 0.1	85.8	< 0.1	< 0.001	5.20	8.7	0.7	0.2	3.39
E832391	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	46.8	< 0.1	< 0.001	< 0.05	0.5	0.6	0.5	0.014
E832392	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35.2	< 0.1	< 0.001	< 0.05	0.7	0.4	0.2	0.008
E832393	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	44.9	0.1	< 0.001	< 0.05	0.5	0.5	0.2	< 0.005
E832394	< 0.1	< 0.1	0.4	< 0.1	< 0.1	41.3	< 0.1	0.002	0.06	0.5	1.4	0.4	0.006
E832395	< 0.1	0.1	0.8	0.1	< 0.1	27.6	0.4	0.007	0.18	10.9	4.8	1.6	0.010
E832396	< 0.1	< 0.1	0.1	< 0.1	< 0.1	46.9	< 0.1	< 0.001	< 0.05	1.4	0.7	0.3	0.008
E832397	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	24.5	< 0.1	< 0.001	< 0.05	0.7	0.4	0.1	0.005
E832398	< 0.1	< 0.1	0.3	< 0.1	< 0.1	63.5	0.2	< 0.001	0.09	3.0	1.5	0.5	< 0.005
E832399	< 0.1	< 0.1	0.6	< 0.1	< 0.1	27.7	0.2	0.003	0.13	1.7	2.8	0.8	0.010
E832400	< 0.1	< 0.1	0.6	< 0.1	< 0.1	228	0.3	< 0.001	0.85	37.9	45.6	2.4	< 0.005
E832401	< 0.1	< 0.1	0.6	< 0.1	< 0.1	28.5	0.2	0.005	0.11	1.5	2.3	0.8	0.010
E832402	< 0.1	< 0.1	0.1	< 0.1	< 0.1	34.9	0.1	< 0.001	< 0.05	0.7	0.7	0.2	< 0.005
E832403	< 0.1	< 0.1	0.1	< 0.1	< 0.1	49.7	0.2	0.002	0.07	0.9	0.8	4.7	< 0.005

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832404	< 0.1	< 0.1	0.1	< 0.1	< 0.1	60.5	0.1	< 0.001	< 0.05	1.3	0.9	1.9	0.008
E832405	< 0.1	< 0.1	0.3	< 0.1	< 0.1	51.3	0.2	< 0.001	0.07	1.4	2.1	30.4	< 0.005
E832406	0.3	0.1	0.8	0.1	0.3	169	0.4	< 0.001	0.17	8.0	4.7	4.1	< 0.005
E832407	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.8	0.1	0.002	< 0.05	0.7	0.7	0.3	0.032
E832408	< 0.1	< 0.1	0.3	< 0.1	< 0.1	36.9	0.1	0.002	< 0.05	0.6	1.6	0.4	0.008
E832409	< 0.1	< 0.1	0.2	< 0.1	< 0.1	68.4	< 0.1	0.001	0.09	0.8	1.8	0.4	< 0.005
E832410	0.2	0.2	1.2	0.2	< 0.1	86.9	< 0.1	< 0.001	5.10	8.8	0.7	0.2	3.27
E832411	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	31.8	0.1	< 0.001	< 0.05	0.9	0.3	0.1	0.010
E832412	< 0.1	< 0.1	0.4	< 0.1	< 0.1	37.2	0.1	0.002	0.12	0.8	2.6	0.6	0.007
E832413	< 0.1	< 0.1	0.1	< 0.1	< 0.1	41.7	0.1	< 0.001	< 0.05	0.8	1.2	0.4	< 0.005
E832414	< 0.1	< 0.1	0.4	< 0.1	< 0.1	33.1	0.3	0.004	0.07	< 0.5	2.3	0.7	< 0.005
E832415	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.4	0.1	0.001	< 0.05	0.8	0.7	0.3	< 0.005
E832416	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	26.1	< 0.1	< 0.001	< 0.05	0.6	0.4	0.1	< 0.005
E832417	< 0.1	< 0.1	0.2	< 0.1	< 0.1	39.1	0.2	0.001	< 0.05	1.1	1.8	2.7	< 0.005
E832418	< 0.1	< 0.1	0.2	< 0.1	< 0.1	41.1	0.2	0.007	0.09	1.6	1.6	25.2	< 0.005
E832419	< 0.1	0.2	1.3	0.2	< 0.1	43.4	0.4	0.004	0.35	1.8	7.3	2.9	0.007
E832420	< 0.1	< 0.1	0.6	< 0.1	< 0.1	229	0.2	< 0.001	0.91	39.1	44.1	2.3	< 0.005
E832421	< 0.1	< 0.1	0.1	< 0.1	< 0.1	26.0	0.1	< 0.001	< 0.05	0.5	0.6	0.3	< 0.005
E832438	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	14.1	0.1	< 0.001	< 0.05	1.1	0.6	0.3	< 0.005
E832439	< 0.1	< 0.1	0.4	< 0.1	< 0.1	44.4	0.2	0.001	0.11	1.0	2.1	0.6	< 0.005
E832440	< 0.1	0.1	0.8	0.1	0.3	228	33.6	< 0.001	0.86	38.6	47.7	2.7	< 0.005
GXR-1 Meas		0.4	2.3	0.3	< 0.1	293	180		0.40	747	2.7	31.6	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
GXR-1 Meas		0.4	2.4	0.3	< 0.1	321	160		0.40	794	2.6	43.9	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2370	
DH-1a Cert											910	2629	
DH-1a Meas											> 500	2420	
DH-1a Cert											910	2629	
GXR-4 Meas		0.1	0.8	0.1	0.7	196	46.3		3.44	50.3	14.9	5.1	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
GXR-4 Meas		0.2	1.1	0.1	0.6	207	37.7		3.25	52.8	19.6	5.8	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.5	3.4		< 0.1	175	< 0.1		0.64	24.8	12.5	2.8	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
SDC-1 Meas		0.5	3.4		< 0.1	178	< 0.1		0.62	25.6	12.0	3.0	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.8	0.3	0.3	35.3	1.4		2.42	104	5.9	1.5	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
GXR-6 Meas			1.8	0.3	< 0.1	38.2	< 0.1		2.27	111	5.4	1.5	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			2.1			149				6.3			
DNC-1a Cert			2.0			144				6.3			

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
DNC-1a Meas			2.0			154				6.1			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.5	0.5	0.7	175	1.6		0.93	36.4	16.7	6.3	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas		0.5	3.6	0.5	0.7	184	1.7		0.93	38.1	16.5	5.8	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.5	0.2	< 0.1	29.7	0.1		0.26	22.1	13.8	2.9	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d (4-Acid) Meas			1.5	0.2	< 0.1	31.4	0.1		0.27	22.2	15.0	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.9	0.4	< 0.1	137	0.2			795	14.8	2.5	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
SdAR-M2 (U.S.G.S.) Meas		0.4	3.0	0.4	< 0.1	151	0.3			860	14.0	2.4	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.76
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.81
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.82
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.538
OREAS 218 Cert													0.531
OREAS 218 Meas													0.516
OREAS 218 Cert													0.531
E832338 Orig	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	32.6	0.1	0.004	< 0.05	2.0	0.4	0.1	
E832338 Dup	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	33.4	0.1	< 0.001	< 0.05	2.9	0.4	0.1	
E832347 Orig													< 0.005
E832347 Dup													0.008
E832357 Orig													0.005
E832357 Dup													< 0.005
E832367 Orig													0.008
E832367 Dup													0.007

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832376 Orig	< 0.1	< 0.1	0.1	< 0.1	< 0.1	30.0	0.1	0.001	< 0.05	0.7	0.4	0.7	
E832376 Dup	< 0.1	< 0.1	0.1	< 0.1	< 0.1	28.4	< 0.1	0.001	< 0.05	1.0	0.4	0.6	
E832378 Orig	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.0	0.1	< 0.001	0.05	0.5	1.4	3.4	
E832378 Dup	< 0.1	< 0.1	0.1	< 0.1	< 0.1	31.0	0.1	< 0.001	< 0.05	0.5	1.3	3.2	
E832382 Orig													0.005
E832382 Dup													< 0.005
E832392 Orig													0.008
E832392 Dup													< 0.005
E832402 Orig													< 0.005
E832402 Dup													0.007
E832414 Orig	< 0.1	< 0.1	0.4	< 0.1	< 0.1	33.1	0.3	0.004	0.07	< 0.5	2.3	0.7	
E832414 Dup	< 0.1	< 0.1	0.4	< 0.1	< 0.1	32.1	0.1	0.004	0.07	< 0.5	2.2	0.7	
E832417 Orig													< 0.005
E832417 Dup													0.008
E832419 Orig	< 0.1	0.2	1.3	0.2	< 0.1	43.4	0.4	0.004	0.35	1.8	7.3	2.9	
E832419 Dup	< 0.1	0.2	1.3	0.2	< 0.1	36.3	0.4	0.004	0.36	1.6	7.2	2.9	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005





**Date Submitted:** 06-Sep-17  
**Invoice No.:** A17-09672  
**Invoice Date:** 18-Oct-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

49 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT **A17-09672**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832099	18	36.0	2.25	1.56	6.92	0.93	3.57	< 0.1	130	147	836	5.80	4.8	68.9	1.7	1.1	0.6	40	< 0.05	1.97	22.0	0.74	0.14
E832100	9	24.8	2.62	0.29	7.84	1.85	1.27	< 0.1	27	8.0	262	1.87	1.6	2.2	0.9	1.2	0.3	20	< 0.05	1.67	3.6	0.68	< 0.02
E832112	21	26.2	2.42	1.09	6.91	1.20	2.51	< 0.1	65	90.6	781	2.72	4.4	55.7	1.1	1.1	0.4	40	< 0.05	2.22	12.6	0.69	0.11
E832113	31	50.3	1.83	1.06	7.48	1.07	1.85	< 0.1	109	127	474	5.68	5.9	56.5	1.0	1.4	0.4	60	< 0.05	2.45	17.7	0.60	0.20
E832114	29	42.7	1.94	1.14	6.85	1.05	2.00	< 0.1	91	129	515	4.35	4.2	45.2	0.9	1.2	0.3	30	< 0.05	3.06	13.5	0.50	0.20
E832115	43	38.0	1.55	1.87	6.74	1.08	6.99	< 0.1	75	81.7	497	3.06	3.4	39.0	1.4	1.6	0.5	50	< 0.05	3.51	11.4	0.88	0.17
E832116	35	51.6	1.52	0.80	8.01	0.86	1.07	< 0.1	86	83.6	316	4.40	3.6	45.9	0.7	1.5	0.3	40	< 0.05	2.92	15.3	0.48	0.16
E832117	31	34.8	2.01	0.86	7.65	1.09	1.46	< 0.1	72	83.7	337	3.32	3.8	35.3	0.9	1.4	0.3	40	< 0.05	2.38	11.6	0.59	0.12
E832118	26	13.4	2.37	0.53	4.74	1.19	1.87	< 0.1	47	60.9	321	1.83	4.3	18.4	0.8	1.1	0.3	30	< 0.05	0.94	6.2	0.47	0.06
E832119	23	17.7	2.28	0.58	6.51	1.18	1.64	< 0.1	65	57.4	287	2.36	3.4	17.3	0.8	1.0	0.3	40	< 0.05	1.76	5.6	0.45	0.12
E832120	8	20.3	2.66	0.26	7.80	1.66	1.22	< 0.1	25	11.3	227	1.69	0.6	1.7	0.7	1.1	0.3	20	< 0.05	1.57	3.2	0.65	< 0.02
E832121	< 1	21.2	2.10	1.12	6.40	1.24	2.62	< 0.1	57	58.7	398	2.48	4.3	27.3	1.1	1.1	0.4	30	< 0.05	1.74	8.6	0.68	0.10
E832122	< 1	17.1	2.13	0.89	6.28	1.04	2.30	< 0.1	51	57.3	356	2.17	4.1	23.0	1.0	1.1	0.3	40	< 0.05	1.55	7.5	0.63	0.09
E832123	< 1	43.1	2.08	1.47	6.52	0.85	3.39	< 0.1	99	179	847	6.36	3.8	71.5	1.6	1.0	0.5	30	< 0.05	2.12	21.5	0.78	0.13
E832124	< 1	12.4	2.51	0.61	6.68	1.37	2.02	< 0.1	45	43.7	324	1.84	0.3	23.4	1.1	1.1	0.4	40	< 0.05	0.94	5.7	0.81	0.06
E832125	< 1	27.2	2.24	0.68	7.14	1.06	1.72	< 0.1	65	51.6	303	2.93	0.9	25.1	0.8	1.2	0.2	40	< 0.05	1.74	8.2	0.46	0.13
E832126	4	26.2	2.13	1.00	7.07	1.24	1.64	< 0.1	65	128	333	3.08	4.1	55.9	1.0	1.3	0.4	200	< 0.05	1.94	11.5	0.63	0.13
E832127	5	13.2	2.31	0.96	6.21	1.05	2.56	< 0.1	89	140	577	4.40	6.7	29.0	1.2	1.1	0.4	20	< 0.05	0.69	8.9	0.75	0.12
E832128	13	28.5	2.17	1.71	7.19	1.09	3.08	< 0.1	120	178	752	5.75	3.4	84.2	1.2	1.2	0.4	50	< 0.05	1.87	25.1	0.53	0.16
E832129	28	10.1	2.17	0.99	3.09	0.70	3.11	< 0.1	135	267	913	6.26	12.8	36.3	1.5	1.1	0.5	10	< 0.05	0.40	12.0	0.66	0.11
E832130	9	6.3	1.46	1.24	5.47	1.34	2.99	< 0.1	83	69.6	513	3.32	1.3	26.0	1.3	0.9	0.5	30	0.94	18.4	14.2	0.59	0.84
E832131	11	34.2	1.99	0.85	7.27	1.14	1.63	< 0.1	69	68.9	361	3.29	3.2	39.7	1.0	1.5	0.3	50	< 0.05	2.27	11.4	0.52	0.13
E832132	< 1	17.6	1.61	2.03	4.94	0.96	8.94	< 0.1	45	46.4	358	1.88	1.4	21.7	1.0	1.0	0.4	30	< 0.05	1.50	6.9	0.63	0.06
E832133	< 1	82.8	1.77	0.93	7.11	0.95	2.47	0.2	72	90.5	510	4.22	3.8	114	2.3	1.6	0.8	60	< 0.05	4.70	15.2	1.53	0.32
E832134	< 1	14.4	2.39	0.57	6.37	1.12	1.97	< 0.1	42	39.7	281	1.71	0.3	15.5	0.8	1.2	0.3	20	< 0.05	0.87	5.6	0.54	0.05
E832135	< 1	13.6	2.53	0.64	6.67	1.31	2.13	< 0.1	47	49.8	370	1.91	0.8	18.7	1.0	1.2	0.4	20	< 0.05	0.96	5.9	0.69	0.06
E832136	< 1	14.1	2.37	0.83	6.66	1.38	2.30	< 0.1	60	77.2	459	2.61	2.1	27.8	1.2	1.2	0.4	30	< 0.05	1.04	7.9	0.71	0.10
E832137	< 1	25.8	2.09	0.67	6.97	1.31	1.48	< 0.1	41	45.5	266	2.43	3.6	27.1	0.9	1.2	0.3	30	< 0.05	1.67	8.5	0.51	0.08
E832138	< 1	35.2	2.00	0.82	6.79	1.00	1.77	< 0.1	68	74.4	380	3.71	3.2	31.0	0.9	1.1	0.3	50	< 0.05	2.25	10.3	0.49	0.15
E832139	24	13.7	2.35	0.72	4.96	0.88	2.15	< 0.1	60	98.7	467	2.52	5.4	26.3	1.0	1.1	0.3	30	< 0.05	0.88	8.0	0.54	0.09
E832140	5	21.9	2.76	0.24	7.74	2.23	1.18	< 0.1	22	8.6	209	1.56	3.2	1.7	0.6	1.0	0.3	20	< 0.05	1.60	3.0	0.59	< 0.02
E832141	7	22.8	2.25	0.65	6.52	1.24	1.74	< 0.1	64	61.6	337	2.86	3.9	20.1	0.7	1.1	0.3	30	< 0.05	1.84	6.5	0.48	0.10
E832142	2	22.1	2.32	0.73	6.90	1.27	1.97	< 0.1	73	91.5	395	3.57	4.7	29.1	1.1	1.3	0.4	40	< 0.05	1.34	9.0	0.66	0.12
E832143	< 1	15.7	2.22	1.37	6.16	1.23	3.78	< 0.1	52	65.0	377	2.06	0.1	33.4	1.3	1.0	0.4	40	< 0.05	1.32	8.5	0.67	0.11
E832144	< 1	26.5	1.87	0.65	6.89	1.20	1.21	< 0.1	49	37.7	266	2.58	0.3	25.8	0.8	1.3	0.3	30	< 0.05	1.77	9.3	0.57	0.10
E832145	8	2.0	0.08	0.16	0.83	0.15	4.86	0.5	25	15.6	464	1.27	0.3	16.6	0.7	0.3	0.2	90	< 0.05	1.41	2.8	0.28	0.05
E832146	7	1.7	0.23	0.21	0.96	0.17	5.58	0.2	12	9.8	162	0.47	< 0.1	7.0	0.3	0.3	0.1	100	< 0.05	0.25	1.4	0.16	< 0.02
E832147	< 1	1.4	0.05	0.09	1.40	0.08	3.37	0.3	23	26.0	221	0.67	0.4	16.2	0.9	0.3	0.3	70	< 0.05	0.53	0.7	0.61	0.02
E832148	4	3.4	0.11	0.25	1.18	0.18	5.91	0.4	13	16.1	185	0.56	< 0.1	6.2	0.8	0.5	0.2	100	< 0.05	0.60	1.4	0.36	0.05
E832149	30	< 0.5	0.03	0.11	0.41	0.03	3.63	0.1	5	6.6	281	1.12	0.1	18.2	0.2	0.1	0.1	90	< 0.05	0.15	8.0	0.17	< 0.02
E832150	< 1	6.3	1.49	1.24	5.50	1.32	3.05	< 0.1	85	68.7	524	3.38	1.0	28.2	1.2	1.0	0.5	30	0.92	18.7	15.1	0.63	0.73
E832151	5	5.1	0.14	0.22	1.57	0.35	4.49	0.5	23	24.7	418	1.27	0.2	15.3	0.9	0.5	0.3	160	0.05	1.65	2.5	0.42	0.18
E832152	17	1.9	0.03	0.14	1.44	0.07	4.31	0.5	21	27.4	677	1.07	0.2	97.4	2.1	0.5	0.8	130	0.27	1.19	10.9	1.56	0.07

Results

Activation Laboratories Ltd.

Report: A17-09672

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832153	< 1	3.9	0.12	0.26	3.03	0.15	3.98	0.3	17	53.6	236	1.95	0.1	94.0	1.8	1.1	0.6	100	0.13	0.82	8.9	0.97	0.07
E832154	23	0.8	0.03	0.22	0.34	0.05	4.90	0.2	8	5.1	174	0.19	< 0.1	6.7	0.1	0.1	< 0.1	80	< 0.05	0.36	0.6	0.06	< 0.02
E832155	< 1	5.7	0.45	0.63	1.88	0.21	5.93	0.1	61	27.0	761	1.56	0.8	19.4	0.7	0.3	0.2	40	< 0.05	1.46	9.2	0.19	0.03
E832198	< 1	34.2	2.13	0.76	6.99	1.41	1.74	< 0.1	40	65.8	354	3.97	2.9	33.7	0.9	1.1	0.3	50	< 0.05	2.27	10.2	0.51	0.14
E832199	21	41.1	1.98	1.12	6.30	0.76	2.60	< 0.1	87	143	616	3.21	6.2	52.9	1.5	1.3	0.5	40	< 0.05	2.49	12.6	0.82	0.22
E832200	12	22.1	2.51	0.24	7.70	1.82	1.10	< 0.1	22	10.5	215	1.59	0.9	2.1	0.7	1.1	0.3	< 10	0.20	1.74	8.4	0.65	< 0.02
GXR-1 Meas	< 1	9.0	0.04	0.22	2.15	0.04	1.04	2.7	85	17.0	963	26.1	0.4	41.3		1.2		3290	28.9	2.91	7.8	0.53	1370
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
GXR-1 Meas	< 1	8.6	0.04	0.21	2.25	0.04	0.98	2.6	81	14.9	845	24.2	0.4	38.6		1.0		2860	28.2	2.83	7.4	0.50	1330
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	11.9	0.57	1.74	6.54	2.61	1.07	0.2	89	45.5	155	3.17	1.3	40.2		2.2		80	3.03	2.52	13.9	1.30	18.6
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
GXR-4 Meas	< 1	11.3	0.54	1.65	6.65	3.86	1.06	0.2	87	39.9	147	3.04	1.2	40.2		1.9		140	3.00	2.49	13.0	1.26	17.9
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	16	36.3	1.54	0.97	8.16	1.39	1.08		57	50.3	840	4.77	1.1	33.7	3.4	2.8	1.1	50		3.87	16.9	1.25	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	12	37.0	1.53	0.98	8.26	1.37	1.04		57	46.2	803	4.66	0.9	33.0	3.4	2.9	1.2	50		3.74	16.2	1.36	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	33.8	0.08	0.56	> 10.0	1.74	0.17	< 0.1	108	40.2	991	5.70	1.8	24.1		1.0		90	0.15	4.14	13.1	0.58	0.16
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.8							144	216				260							54.8	0.52	
DNC-1a Cert		5.2							148	270				247							57	0.59	
DNC-1a Meas		5.0							145	244				269							53.7	0.51	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		166						0.4	205	67.0			3.0	82.1	3.2	3.2	1.2			7.72	20.9	1.58	0.63
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
SBC-1 Meas		178						0.4	214	76.5			3.1	88.0	3.4	3.5	1.2			8.70	21.6	1.74	0.67
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		23.3	0.09	0.20	8.22	0.41	0.19		89	477	486	15.1	1.4	242	1.3	0.8	0.5			3.76	29.2	0.53	0.33
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		22.4	0.09	0.19	8.01	0.40	0.19		95	484	462	14.0	1.7	227	1.3	0.7	0.4			3.66	26.9	0.53	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		18.5						4.8	24	36.9			3.8	46.5	2.7	6.5	1.0	1210		1.62	12.3	1.16	0.95
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire																							

Results

Activation Laboratories Ltd.

Report: A17-09672

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832099 Orig	18	36.0	2.25	1.56	6.92	0.93	3.57	< 0.1	130	147	836	5.80	4.8	68.9	1.7	1.1	0.6	40	< 0.05	1.97	22.0	0.74	0.14
E832099 Dup	9	35.7	2.35	1.60	7.13	0.96	3.68	< 0.1	136	160	821	5.93	3.9	68.0	1.7	1.1	0.6	30	< 0.05	1.85	22.5	0.75	0.14
E832117 Orig																							
E832117 Dup																							
E832127 Orig																							
E832127 Dup																							
E832137 Orig																							
E832137 Dup																							
E832148 Orig	4	3.4	0.11	0.25	1.18	0.18	5.91	0.4	13	16.1	185	0.56	< 0.1	6.2	0.8	0.5	0.2	100	< 0.05	0.60	1.4	0.36	0.05
E832148 Dup	4	3.3	0.12	0.26	1.23	0.18	5.96	0.4	13	16.8	178	0.58	< 0.1	6.2	0.7	0.5	0.2	100	< 0.05	0.63	1.4	0.36	0.05
E832150 Orig	< 1	6.3	1.49	1.24	5.50	1.32	3.05	< 0.1	85	68.7	524	3.38	1.0	28.2	1.2	1.0	0.5	30	0.92	18.7	15.1	0.63	0.73
E832150 Dup	< 1	6.4	1.51	1.28	5.56	1.26	3.13	< 0.1	72	62.5	527	3.46	0.2	27.6	1.3	0.9	0.5	40	1.01	18.9	15.1	0.63	0.77
E832152 Orig																							
E832152 Dup																							
Method Blank		< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	7.6	11	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank		< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	8.1	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank		< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	8.9	8	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank		< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	14.3	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832099	< 0.1	76.3	13.6	6.4	34.8	15.9	192	1.0	< 0.05	< 0.1	< 1	< 0.1	< 0.1	360	15.3	34.3	3.5	16.1	2.6	2.6	0.4	2.8	42.4
E832100	< 0.1	60.6	13.6	< 0.1	92.8	9.5	150	3.5	0.66	< 0.1	< 1	< 0.1	< 0.1	883	73.8	153	14.5	58.3	7.3	4.7	0.4	2.3	4.8
E832112	< 0.1	45.3	11.4	32.6	44.5	11.5	183	6.4	0.09	< 0.1	< 1	0.3	< 0.1	497	16.7	38.5	3.8	16.4	2.7	2.3	0.3	2.1	17.8
E832113	< 0.1	71.7	15.8	12.3	55.3	10.8	259	2.8	1.00	< 0.1	< 1	< 0.1	< 0.1	469	21.1	41.9	4.1	16.8	2.7	2.2	0.3	1.9	20.7
E832114	< 0.1	51.1	15.2	5.8	56.2	8.8	174	2.2	0.32	< 0.1	< 1	< 0.1	< 0.1	419	14.6	34.2	3.2	12.8	2.0	1.7	0.2	1.6	11.0
E832115	< 0.1	65.5	11.3	12.8	64.4	14.6	132	9.0	0.38	< 0.1	1	0.4	< 0.1	551	33.3	72.4	6.9	28.7	4.5	3.2	0.4	2.5	24.1
E832116	< 0.1	52.5	13.5	4.0	51.0	7.8	144	10.9	0.66	< 0.1	1	0.2	< 0.1	546	13.9	30.1	3.0	12.4	2.0	1.6	0.2	1.4	14.3
E832117	< 0.1	47.7	13.2	3.3	57.4	9.6	157	6.5	0.39	< 0.1	< 1	< 0.1	< 0.1	606	16.0	36.5	3.4	14.8	2.5	1.9	0.3	1.7	10.2
E832118	< 0.1	29.1	11.1	1.0	27.6	6.8	186	6.7	0.44	< 0.1	< 1	< 0.1	< 0.1	510	8.5	23.5	2.4	10.6	1.9	1.6	0.2	1.4	8.1
E832119	< 0.1	34.4	13.9	1.3	60.5	7.1	150	4.7	0.38	< 0.1	< 1	< 0.1	< 0.1	503	9.1	19.8	1.9	8.4	1.4	1.2	0.2	1.2	5.0
E832120	< 0.1	51.0	12.7	< 0.1	85.4	9.0	102	2.2	0.45	< 0.1	< 1	< 0.1	< 0.1	877	67.2	143	13.6	53.6	7.3	4.5	0.4	2.1	4.3

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832121	< 0.1	38.1	11.0	3.4	50.1	11.8	182	4.7	0.27	< 0.1	< 1	0.1	< 0.1	509	24.0	49.3	5.2	21.1	3.9	2.8	0.4	2.1	13.4
E832122	< 0.1	32.8	10.5	2.2	46.3	9.9	183	3.9	0.09	< 0.1	< 1	< 0.1	< 0.1	545	17.7	38.2	3.8	15.9	3.2	2.2	0.3	1.7	7.9
E832123	< 0.1	74.0	14.5	3.9	33.3	16.8	162	0.3	< 0.05	< 0.1	< 1	< 0.1	< 0.1	338	20.8	49.3	4.8	20.9	3.1	2.9	0.4	2.8	39.8
E832124	< 0.1	28.4	10.1	2.5	40.1	12.1	30	2.3	0.07	< 0.1	< 1	< 0.1	< 0.1	563	21.7	54.5	4.9	20.8	3.3	2.7	0.4	2.1	13.7
E832125	< 0.1	54.5	15.9	4.0	45.7	7.7	75	2.4	0.32	< 0.1	< 1	< 0.1	< 0.1	484	9.9	23.4	2.1	9.6	1.6	1.4	0.2	1.4	11.6
E832126	< 0.1	42.8	13.2	5.3	51.8	10.2	179	3.4	0.24	< 0.1	< 1	< 0.1	< 0.1	561	17.0	38.1	3.7	15.8	2.3	2.2	0.3	1.8	13.6
E832127	< 0.1	37.6	14.1	1.1	31.8	12.8	303	0.7	< 0.05	< 0.1	< 1	< 0.1	< 0.1	388	20.6	45.7	4.8	20.5	3.2	2.6	0.3	2.2	< 0.2
E832128	< 0.1	79.1	13.5	30.5	37.6	11.1	144	5.3	0.39	< 0.1	< 1	0.1	< 0.1	394	9.4	19.5	1.9	8.5	1.6	1.7	0.2	1.9	58.3
E832129	< 0.1	51.1	13.4	1.9	7.2	12.0	540	16.6	0.51	< 0.1	1	< 0.1	< 0.1	339	23.7	57.6	6.1	26.3	4.1	3.4	0.4	2.7	< 0.2
E832130	< 0.1	50.4	14.4	6.1	40.2	13.3	55	0.3	2.33	< 0.1	< 1	0.3	< 0.1	50	3.6	9.6	1.3	6.3	2.0	2.2	0.3	2.3	34.3
E832131	< 0.1	54.8	12.9	4.5	53.6	9.2	134	5.6	0.55	< 0.1	< 1	0.1	< 0.1	508	14.2	34.5	3.1	13.4	2.1	1.8	0.2	1.6	11.4
E832132	< 0.1	32.8	7.1	1.1	40.7	11.0	87	2.9	0.21	< 0.1	< 1	< 0.1	< 0.1	430	24.7	51.2	5.2	20.7	3.6	2.5	0.3	1.9	15.6
E832133	0.8	85.1	13.8	123	57.9	26.3	169	0.5	0.17	< 0.1	< 1	< 0.1	< 0.1	427	64.3	137	12.5	53.5	7.2	6.1	0.7	4.3	106
E832134	< 0.1	28.0	10.8	1.8	40.9	8.5	30	2.3	0.18	< 0.1	< 1	< 0.1	< 0.1	517	12.8	27.1	2.8	11.9	1.7	1.7	0.2	1.5	2.8
E832135	< 0.1	28.9	10.6	1.2	44.0	11.2	73	3.2	0.23	< 0.1	< 1	< 0.1	< 0.1	552	17.8	39.3	4.0	17.7	2.5	2.3	0.3	1.9	3.4
E832136	< 0.1	34.5	11.5	1.3	50.4	12.3	152	2.9	0.09	< 0.1	< 1	< 0.1	< 0.1	466	18.8	43.7	4.4	18.9	3.4	2.7	0.3	2.0	4.4
E832137	< 0.1	35.8	10.9	0.4	50.3	8.9	164	0.9	< 0.05	< 0.1	< 1	< 0.1	< 0.1	589	13.5	32.1	3.0	12.4	1.8	1.8	0.2	1.5	8.7
E832138	< 0.1	52.0	16.8	7.4	43.2	9.4	159	1.2	0.16	< 0.1	< 1	< 0.1	< 0.1	427	8.8	19.7	2.1	9.2	1.7	1.7	0.2	1.6	19.6
E832139	< 0.1	32.3	11.4	1.2	25.0	8.8	231	8.5	0.11	< 0.1	< 1	< 0.1	< 0.1	439	12.2	30.1	3.2	13.5	2.6	1.9	0.3	1.7	3.8
E832140	< 0.1	47.8	12.8	< 0.1	90.2	7.4	184	3.8	0.54	< 0.1	< 1	< 0.1	< 0.1	915	77.3	158	14.3	54.5	7.6	4.5	0.4	1.8	3.9
E832141	< 0.1	41.6	13.9	1.4	59.1	7.4	167	2.4	0.32	< 0.1	< 1	< 0.1	< 0.1	502	9.3	20.6	2.1	9.3	1.5	1.3	0.2	1.3	4.1
E832142	< 0.1	39.8	13.7	2.5	46.9	10.9	217	2.0	0.29	< 0.1	< 1	< 0.1	< 0.1	494	16.3	36.9	3.6	15.4	2.8	2.2	0.3	2.0	4.5
E832143	< 0.1	37.2	10.2	0.3	43.7	11.7	11	1.8	0.20	< 0.1	< 1	< 0.1	< 0.1	465	20.6	43.0	4.3	18.6	2.9	2.6	0.3	2.0	14.9
E832144	< 0.1	35.7	10.7	0.9	49.0	9.2	39	0.8	< 0.05	< 0.1	< 1	< 0.1	< 0.1	569	17.2	41.8	3.8	15.1	2.6	1.8	0.3	1.6	11.3
E832145	2.6	7.0	1.4	20.5	6.5	7.2	16	1.5	2.52	< 0.1	< 1	0.5	< 0.1	153	13.8	27.4	2.7	11.3	1.7	1.4	0.2	1.1	45.9
E832146	1.8	11.1	1.0	0.9	5.4	3.2	2	0.6	0.36	< 0.1	< 1	0.2	< 0.1	113	7.3	14.3	1.5	6.1	0.8	0.7	0.1	0.6	22.5
E832147	1.3	7.4	0.7	22.9	4.5	11.3	17	1.0	0.59	< 0.1	< 1	0.2	< 0.1	96	32.1	57.5	6.0	24.1	3.4	2.6	0.3	1.8	67.9
E832148	2.4	11.7	1.7	1.4	6.9	7.2	2	1.0	0.25	< 0.1	< 1	0.2	< 0.1	123	15.9	26.6	3.2	13.9	1.8	1.6	0.2	1.3	21.5
E832149	0.7	9.7	< 0.1	4.9	1.3	2.8	5	0.3	0.39	< 0.1	< 1	0.2	< 0.1	105	7.5	12.0	1.5	6.5	0.9	0.7	0.1	0.5	34.7
E832150	< 0.1	54.0	15.3	6.9	42.2	13.8	47	0.3	2.05	< 0.1	< 1	0.2	< 0.1	47	3.7	9.8	1.2	6.6	1.9	2.2	0.4	2.4	34.3
E832151	3.3	35.6	3.1	6.9	15.8	9.1	9	2.4	0.78	< 0.1	< 1	0.2	< 0.1	183	18.3	38.1	3.8	15.5	2.7	1.9	0.2	1.6	43.8
E832152	3.8	8.4	0.8	48.4	4.1	29.4	9	0.9	1.04	< 0.1	< 1	2.0	< 0.1	111	122	154	19.9	78.7	8.5	7.6	0.8	4.7	194
E832153	2.3	17.1	2.6	48.5	5.4	21.2	10	1.4	0.52	< 0.1	< 1	0.2	< 0.1	133	46.7	65.5	8.1	34.2	4.4	3.9	0.5	3.0	160
E832154	0.4	15.5	0.1	0.6	2.1	1.3	2	0.4	0.93	< 0.1	< 1	0.5	< 0.1	76	2.0	3.8	0.4	1.9	0.3	0.2	< 0.1	0.2	10.9
E832155	0.4	62.7	2.5	5.2	9.0	5.9	29	2.3	0.44	< 0.1	< 1	0.2	< 0.1	199	3.6	7.1	0.9	3.9	0.6	0.8	0.1	1.0	36.2
E832198	< 0.1	50.1	16.2	8.6	49.6	8.7	128	0.4	< 0.05	< 0.1	< 1	< 0.1	< 0.1	465	12.4	27.4	2.7	11.3	2.2	1.8	0.2	1.5	22.8
E832199	< 0.1	69.3	15.2	1.3	33.9	15.1	278	7.8	0.34	< 0.1	1	< 0.1	< 0.1	323	35.5	76.2	6.7	27.7	3.5	3.6	0.4	2.8	23.4
E832200	< 0.1	48.8	13.6	< 0.1	90.8	8.8	93	2.7	0.53	< 0.1	< 1	< 0.1	< 0.1	888	70.9	143	13.3	51.7	7.8	4.6	0.4	2.0	20.9
GXR-1 Meas	18.5	847	1.1	453	2.7	30.3	20	0.8	19.5	0.7	29	34.7	9.6	690	7.2	15.4		9.2	2.6	3.9	0.6	4.5	1230
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
GXR-1 Meas	17.8	813	2.3	435	2.6	29.8	19	0.7	18.8	0.7	29	33.8	9.3	653	6.8	15.0		8.6	2.5	3.6	0.6	4.6	1190
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							

Results

Activation Laboratories Ltd.

Report: A17-09672

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	6.1	78.2	18.7	106	108	13.6	45	10.0	343	0.2	7	4.7	0.9	191	54.6	112		44.8	5.2	4.6	0.4	2.9	6920
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	5.8	74.3	18.9	102	127	13.2	44	9.6	338	0.2	7	4.6	0.9	174	54.4	109		42.9	5.5	4.3	0.4	2.7	6740
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		112	15.6	< 0.1	80.9		44	0.4			< 1	< 0.1		578	35.8	87.5		38.7	7.1	6.2	0.8	5.9	30.2
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		111	15.1	< 0.1	78.6		37	0.3			< 1	< 0.1		596	38.3	90.6		40.7	8.5	6.7	0.9	5.8	29.5
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	< 0.1	139	13.4	223	71.8	12.7	66	0.7	0.24	< 0.1	< 1	0.6	< 0.1	1210	12.3	36.5		13.6	2.2	2.4	0.3	2.3	74.8
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		71.1	14.7		3.0	15.9	41	1.5				0.6		98	3.3			4.7					103
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		72.1	15.4		3.1	16.7	41	1.6				0.7		101	3.5			5.0					104
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas	199	17.1	22.3	110	30.6	122	11.9	2.13			3	0.9		734	46.5	106	10.8	46.9	10.1	7.6	0.9	6.0	32.1
SBC-1 Cert	186	27.0	25.7	147	36.5	134.0	15.3	2.40			3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		219	21.5	23.5	122	32.9	134	12.7	2.34		3	1.0		737	50.3	113	11.9	52.4	7.3	7.6	1.0	6.6	31.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas	49.6	23.5	5.8	39.5	11.5	63	0.3	0.16	< 0.1	< 1	< 0.1			182	17.2	38.6	3.6	15.1	3.2	2.3	0.3	2.2	417
OREAS 45d (4-Acid) Cert	45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82			183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas	46.2	22.8	6.2	37.3	10.6	73	0.3	0.22	< 0.1	< 1	< 0.1			174	15.3	36.8	3.5	13.8	2.8	2.3	0.3	2.2	393
OREAS 45d (4-Acid) Cert	45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82			183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas	838	3.7		81.1	25.4	134	13.6	13.1						994	42.4	98.9	9.9	38.8	6.9	5.3	0.7	4.6	261
SdAR-M2 (U.S.G.S.) Cert	760	17.6		149	32.7	259	26.2	13.3						990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832099 Orig	< 0.1	76.3	13.6	6.4	34.8	15.9	192	1.0	< 0.05	< 0.1	< 1	< 0.1	< 0.1	360	15.3	34.3	3.5	16.1	2.6	2.6	0.4	2.8	42.4
E832099 Dup	< 0.1	77.9	13.9	6.4	34.4	16.2	169	0.7	0.07	< 0.1	< 1	< 0.1	< 0.1	365	12.8	29.6	3.2	14.3	2.6	2.7	0.4	2.7	41.9

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832117 Orig																							
E832117 Dup																							
E832127 Orig																							
E832127 Dup																							
E832137 Orig																							
E832137 Dup																							
E832148 Orig	2.4	11.7	1.7	1.4	6.9	7.2	2	1.0	0.25	< 0.1	< 1	0.2	< 0.1	123	15.9	26.6	3.2	13.9	1.8	1.6	0.2	1.3	21.5
E832148 Dup	2.1	14.3	1.5	1.8	6.9	7.3	2	0.8	0.36	< 0.1	< 1	0.1	< 0.1	126	15.8	26.4	3.2	13.7	1.8	1.5	0.2	1.4	22.5
E832150 Orig	< 0.1	54.0	15.3	6.9	422	13.8	47	0.3	2.05	< 0.1	< 1	0.2	< 0.1	47	3.7	9.8	1.2	6.6	1.9	2.2	0.4	2.4	34.3
E832150 Dup	< 0.1	59.0	15.7	5.1	413	14.1	20	0.1	1.15	< 0.1	< 1	< 0.1	< 0.1	51	3.8	9.8	1.2	6.6	1.9	2.3	0.3	2.4	35.8
E832152 Orig																							
E832152 Dup																							
Method Blank	< 0.1	0.5	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.8	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.5	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	0.4	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832099	< 0.1	0.3	1.8	0.3	< 0.1	195	0.3	< 0.001	0.25	11.4	6.1	1.2	0.008
E832100	< 0.1	0.1	0.7	0.1	< 0.1	213	0.5	< 0.001	1.01	36.3	50.4	3.1	< 0.005
E832112	< 0.1	0.2	1.1	0.2	0.3	250	0.5	< 0.001	0.35	12.0	6.1	1.1	0.005
E832113	< 0.1	0.2	1.2	0.2	0.1	204	0.3	< 0.001	0.36	17.1	7.7	1.5	< 0.005
E832114	< 0.1	0.1	0.9	0.1	0.1	198	0.2	< 0.001	0.32	14.6	10.0	1.1	0.036
E832115	< 0.1	0.2	1.4	0.2	0.5	213	0.7	< 0.001	0.53	16.0	12.0	1.5	0.005
E832116	< 0.1	0.1	0.9	0.1	0.6	188	0.9	< 0.001	0.43	20.3	6.9	1.2	< 0.005
E832117	< 0.1	0.1	1.0	0.1	0.3	235	0.4	< 0.001	0.42	16.3	6.2	1.1	< 0.005
E832118	< 0.1	0.1	0.8	0.1	0.4	247	0.4	0.002	0.32	12.0	2.3	0.7	< 0.005
E832119	< 0.1	0.1	0.8	0.1	0.3	250	0.2	< 0.001	0.34	14.6	3.5	1.0	< 0.005
E832120	< 0.1	0.1	0.6	0.1	< 0.1	227	0.5	< 0.001	0.96	33.5	40.3	2.6	< 0.005
E832121	< 0.1	0.2	1.1	0.1	0.3	235	0.3	< 0.001	0.38	12.5	8.9	3.0	0.005
E832122	< 0.1	0.1	1.0	0.1	0.3	245	0.4	< 0.001	0.36	12.4	6.0	1.2	< 0.005
E832123	< 0.1	0.3	1.9	0.3	< 0.1	190	< 0.1	< 0.001	0.23	10.3	5.5	1.1	< 0.005
E832124	< 0.1	0.2	1.1	0.2	0.1	280	0.2	< 0.001	0.30	12.2	6.4	1.3	< 0.005
E832125	< 0.1	0.1	0.8	0.1	0.1	262	0.2	< 0.001	0.31	15.7	3.7	0.9	< 0.005
E832126	< 0.1	0.1	1.0	0.1	0.2	253	0.2	< 0.001	0.39	14.8	6.5	1.1	0.020
E832127	< 0.1	0.2	1.3	0.2	< 0.1	272	< 0.1	< 0.001	0.18	12.2	9.0	1.3	< 0.005
E832128	< 0.1	0.2	1.2	0.2	0.2	200	0.7	< 0.001	0.25	13.5	3.6	0.8	0.006
E832129	< 0.1	0.2	1.6	0.2	0.9	237	3.0	< 0.001	0.18	12.7	9.4	1.8	< 0.005

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832130	0.1	0.2	1.2	0.2	< 0.1	83.3	0.1	< 0.001	5.56	8.5	0.7	0.2	3.03
E832131	< 0.1	0.1	0.9	0.1	0.3	235	0.5	< 0.001	0.39	16.0	6.2	1.1	< 0.005
E832132	< 0.1	0.1	1.0	0.1	0.1	216	0.4	< 0.001	0.32	10.3	8.8	1.0	0.005
E832133	< 0.1	0.3	2.1	0.3	< 0.1	190	< 0.1	0.001	0.44	24.0	15.0	2.8	0.008
E832134	< 0.1	0.1	0.8	0.1	0.1	278	0.3	< 0.001	0.29	11.8	4.7	1.0	< 0.005
E832135	< 0.1	0.2	1.0	0.2	< 0.1	287	0.3	< 0.001	0.31	11.9	5.8	1.0	0.005
E832136	< 0.1	0.2	1.3	0.2	0.2	270	0.1	< 0.001	0.27	12.2	6.6	1.2	0.005
E832137	< 0.1	0.1	0.9	0.1	< 0.1	242	< 0.1	< 0.001	0.36	13.6	5.1	1.0	0.005
E832138	< 0.1	0.1	1.0	0.1	< 0.1	234	< 0.1	< 0.001	0.29	14.2	3.2	0.9	0.005
E832139	< 0.1	0.1	1.0	0.2	0.5	245	0.4	< 0.001	0.26	12.4	4.5	0.9	0.005
E832140	< 0.1	0.1	0.5	0.1	< 0.1	225	0.4	< 0.001	0.86	38.6	49.1	2.7	< 0.005
E832141	< 0.1	0.1	0.8	0.1	0.1	252	0.1	< 0.001	0.32	13.4	3.4	0.8	< 0.005
E832142	< 0.1	0.2	1.1	0.2	< 0.1	260	0.1	< 0.001	0.29	14.6	5.4	1.0	< 0.005
E832143	< 0.1	0.2	1.1	0.2	< 0.1	246	0.2	< 0.001	0.34	11.4	5.9	1.5	< 0.005
E832144	< 0.1	0.1	1.0	0.1	< 0.1	234	< 0.1	< 0.001	0.39	14.3	7.0	6.2	0.005
E832145	< 0.1	0.1	0.6	0.1	< 0.1	49.6	0.3	0.001	0.15	1.9	2.6	7.6	0.006
E832146	< 0.1	< 0.1	0.3	< 0.1	< 0.1	66.4	0.2	0.001	0.05	1.5	1.5	0.9	< 0.005
E832147	< 0.1	0.1	0.9	0.1	< 0.1	40.2	0.3	0.003	0.16	0.9	5.3	1.4	0.008
E832148	< 0.1	0.1	0.7	0.1	< 0.1	61.5	0.2	< 0.001	0.08	3.0	3.5	4.6	< 0.005
E832149	< 0.1	< 0.1	0.3	< 0.1	< 0.1	26.7	0.1	0.001	0.06	< 0.5	1.1	0.4	< 0.005
E832150	0.1	0.2	1.2	0.1	< 0.1	90.0	< 0.1	< 0.001	5.65	7.9	0.6	0.2	3.20
E832151	< 0.1	0.1	0.8	0.1	< 0.1	66.6	0.6	0.001	0.16	7.2	5.9	15.3	0.005
E832152	< 0.1	0.3	1.9	0.3	< 0.1	34.8	0.3	0.011	0.53	2.2	6.0	10.7	0.013
E832153	< 0.1	0.2	1.6	0.3	< 0.1	42.5	0.5	0.001	0.30	3.8	5.5	4.3	0.012
E832154	< 0.1	< 0.1	0.1	< 0.1	< 0.1	45.1	0.2	< 0.001	< 0.05	0.9	0.6	0.6	0.006
E832155	< 0.1	0.1	0.7	0.1	< 0.1	64.3	0.3	< 0.001	0.11	3.4	1.7	0.7	0.006
E832198	< 0.1	0.1	0.9	0.1	< 0.1	236	< 0.1	< 0.001	0.32	15.8	4.6	1.3	0.006
E832199	< 0.1	0.2	1.6	0.2	0.5	188	0.5	< 0.001	0.31	15.2	14.7	2.7	0.008
E832200	< 0.1	0.1	0.6	0.1	0.1	237	13.8	< 0.001	0.93	36.7	48.1	3.1	< 0.005
GXR-1 Meas		0.3	2.2	0.3	< 0.1	311	162		0.41	752	2.6	34.4	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
GXR-1 Meas		0.3	2.2	0.3	< 0.1	295	159		0.40	723	2.5	41.4	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2480	
DH-1a Cert											910	2629	
DH-1a Meas											> 500	2390	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	1.1	0.1	0.6	209	38.9		3.34	51.0	20.1	5.9	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
GXR-4 Meas		0.2	1.0	0.1	0.5	202	35.2		3.21	48.6	19.7	5.8	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.5	3.2		< 0.1	165	< 0.1		0.65	24.0	11.6	2.8	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
SDC-1 Meas		0.5	3.3		< 0.1	161	< 0.1		0.66	23.8	12.1	2.9	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.7	0.3	< 0.1	34.2	0.1		2.35	104	5.4	1.5	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			1.9			142				5.5			
DNC-1a Cert			2.0			144				6.3			
DNC-1a Meas			1.9			139				5.2			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.3	0.5	0.8	164	1.3		0.92	34.8	15.8	5.8	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas		0.5	3.5	0.5	0.8	178	1.6		0.96	36.8	16.7	6.1	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.5	0.2	< 0.1	30.5	0.1		0.26	20.9	15.3	2.8	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	27.9	0.1		0.25	20.4	14.6	2.9	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.9	0.4	0.7	134	1.5			783	14.7	2.6	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.71
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.507
OREAS 218 Cert													0.531
OREAS 218 Meas													0.531
OREAS 218 Cert													0.531
E832099 Orig	< 0.1	0.3	1.8	0.3	< 0.1	195	0.3	< 0.001	0.25	11.4	6.1	1.2	
E832099 Dup	< 0.1	0.2	1.8	0.3	< 0.1	197	0.3	< 0.001	0.24	11.2	5.5	1.0	
E832117 Orig													< 0.005
E832117 Dup													< 0.005
E832127 Orig													< 0.005
E832127 Dup													< 0.005
E832137 Orig													0.005
E832137 Dup													0.006
E832148 Orig	< 0.1	0.1	0.7	0.1	< 0.1	61.5	0.2	< 0.001	0.08	3.0	3.5	4.6	
E832148 Dup	< 0.1	0.1	0.7	0.1	< 0.1	63.2	0.2	0.001	0.08	2.9	3.3	4.5	
E832150 Orig	0.1	0.2	1.2	0.1	< 0.1	90.0	< 0.1	< 0.001	5.65	7.9	0.6	0.2	
E832150 Dup	0.1	0.2	1.2	0.2	< 0.1	90.2	< 0.1	< 0.001	5.76	7.9	0.6	0.2	
E832152 Orig													0.013

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832152 Dup													0.011
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.2	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005



**Date Submitted:** 22-Sep-17  
**Invoice No.:** A17-10380 (i)  
**Invoice Date:** 16-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

399 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-10380 (i)**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

Footnote: Sample E835204, E835251, E835264, E835269 and E835273 are Insufficient for further analyses.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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**Date Submitted:** 22-Sep-17  
**Invoice No.:** A17-10380 (i)  
**Invoice Date:** 16-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

399 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-10380 (i)**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

Footnote: Sample E835204, E835251, E835264, E835269 and E835273 are Insufficient for further analyses.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835451	< 0.005	1	12.1	2.34	0.82	6.29	1.56	2.24	< 0.1	45	46.0	368	1.66	0.1	26.4	1.2	1.0	0.4	50	< 0.05	0.74	7.1	0.77
E835452	< 0.005	< 1	56.2	2.20	0.88	6.94	1.40	2.04	< 0.1	46	67.7	326	2.78	3.0	81.4	1.2	1.1	0.4	60	< 0.05	3.06	14.4	0.86
E835453	< 0.005	2	23.1	2.15	0.46	6.57	1.61	1.66	< 0.1	39	55.2	243	2.22	4.5	33.2	0.8	1.1	0.3	60	< 0.05	1.29	7.8	0.57
E835454	< 0.005	< 1	31.3	2.26	0.68	6.25	1.82	1.83	< 0.1	39	54.5	294	1.62	0.7	28.4	0.8	1.1	0.3	40	< 0.05	4.13	6.2	0.57
E835455	0.186	< 1	46.6	1.96	1.03	7.30	1.44	1.98	< 0.1	89	82.8	398	4.28	2.2	95.1	1.0	1.4	0.4	60	< 0.05	4.96	19.2	0.65
E835456	0.008	< 1	51.0	1.91	0.90	6.90	1.47	1.95	< 0.1	71	90.2	418	3.59	4.6	74.9	1.1	1.1	0.4	40	< 0.05	7.71	13.5	0.73
E835457	0.005	17	41.4	1.53	1.15	7.20	2.05	1.65	0.4	69	64.5	550	3.25	3.5	82.1	2.3	1.7	0.8	80	< 0.05	4.47	18.2	1.30
E835458	< 0.005	15	27.5	2.12	0.73	6.41	1.62	1.76	< 0.1	63	54.4	391	2.52	3.6	22.5	0.9	1.0	0.3	60	< 0.05	1.55	8.3	0.57
E835459	< 0.005	13	26.7	2.21	0.46	5.51	1.52	1.59	< 0.1	56	67.8	346	2.27	3.5	21.3	0.7	1.0	0.3	50	< 0.05	1.49	7.6	0.44
E835460	< 0.005	7	17.5	2.59	0.18	7.38	2.96	1.18	< 0.1	20	9.4	190	1.30	0.1	3.8	0.8	1.0	0.4	50	0.05	1.62	3.7	0.75
E835461	< 0.005	< 1	22.0	2.06	0.69	6.46	1.66	1.62	< 0.1	91	50.9	304	3.25	0.2	22.3	0.9	1.1	0.3	70	< 0.05	1.99	6.9	0.55
E835462	0.241	< 1	25.6	2.25	0.81	6.74	1.62	1.94	< 0.1	48	78.8	406	3.84	3.8	33.0	0.9	1.3	0.3	50	0.07	1.43	10.5	0.58
E835463	< 0.005	< 1	35.8	2.16	1.27	6.73	1.10	2.62	< 0.1	49	130	713	5.35	1.7	56.1	1.4	1.0	0.4	40	< 0.05	2.64	19.0	0.66
E835464	< 0.005	< 1	21.5	2.12	0.77	6.49	1.79	1.82	< 0.1	36	71.6	371	2.85	2.6	33.6	1.1	1.2	0.4	40	< 0.05	1.51	8.6	0.66
E835465	< 0.005	< 1	13.6	2.31	0.42	6.22	1.79	1.67	< 0.1	42	48.8	235	1.78	2.8	19.9	0.8	1.1	0.3	40	< 0.05	0.87	6.3	0.55
E835466	< 0.005	< 1	10.5	2.31	0.52	6.00	1.67	1.89	< 0.1	44	50.4	299	1.79	0.8	19.0	1.1	1.1	0.4	30	< 0.05	0.71	6.1	0.74
E835467	< 0.005	< 1	21.5	2.18	0.75	6.98	2.15	1.71	< 0.1	39	46.6	313	2.19	3.5	26.8	1.3	1.5	0.4	40	< 0.05	1.66	7.2	0.83
E835468	< 0.005	< 1	13.4	1.96	1.46	5.71	1.83	4.56	< 0.1	38	32.4	277	1.55	3.0	19.1	1.1	1.0	0.4	50	< 0.05	1.00	5.4	0.77
E835469	< 0.005	< 1	10.8	2.30	0.68	6.12	1.72	1.95	< 0.1	48	56.0	344	1.92	0.2	19.0	1.1	1.1	0.4	50	< 0.05	0.74	6.0	0.78
E835470	3.22	7	6.0	1.40	1.18	4.69	2.35	2.82	< 0.1	80	70.7	522	3.10	1.4	27.0	1.3	0.8	0.5	50	0.86	17.3	14.0	0.62
E835471	< 0.005	22	27.1	1.94	0.92	6.38	1.95	1.81	< 0.1	60	71.3	363	2.47	4.3	28.1	1.4	1.3	0.5	50	< 0.05	1.96	8.2	0.92
E835472	< 0.005	< 1	21.4	2.01	0.71	6.41	2.12	1.72	< 0.1	48	47.3	304	2.08	4.3	25.0	1.3	1.3	0.5	60	< 0.05	1.90	7.5	0.95
E835473	< 0.005	< 1	13.9	2.05	0.41	5.88	1.90	1.42	< 0.1	38	35.1	251	1.55	0.7	15.7	0.9	1.1	0.3	50	< 0.05	1.10	5.0	0.59
E835474	< 0.005	< 1	40.2	1.57	1.17	7.45	2.58	1.20	< 0.1	33	58.8	555	3.26	2.4	42.1	1.2	1.5	0.4	50	< 0.05	3.59	13.5	0.76
E835475	< 0.005	< 1	15.7	2.05	0.68	6.03	1.89	1.70	< 0.1	43	63.2	355	2.20	4.8	20.6	1.1	1.1	0.4	30	< 0.05	1.23	6.2	0.69
E835476	< 0.005	< 1	21.9	1.82	0.82	6.10	1.47	1.96	0.1	91	153	547	5.08	7.3	35.2	1.6	1.1	0.5	20	< 0.05	1.28	11.4	0.87
E835477	< 0.005	< 1	12.4	2.14	0.45	6.12	1.58	1.76	< 0.1	44	65.2	325	2.17	3.5	20.5	1.0	1.2	0.4	40	< 0.05	0.64	7.4	0.78
E835478	< 0.005	< 1	16.5	2.19	0.46	6.35	1.62	1.77	< 0.1	37	50.6	268	1.94	3.3	21.5	1.0	1.2	0.3	40	< 0.05	0.87	7.1	0.69
E835479	< 0.005	< 1	22.5	2.07	0.67	6.64	1.56	1.73	< 0.1	67	74.9	321	3.11	4.9	31.7	1.1	1.1	0.4	60	< 0.05	1.24	10.4	0.68
E835480	< 0.005	4	19.9	2.59	0.12	4.34	2.50	0.96	< 0.1	19	17.1	227	1.67	6.3	3.0	0.3	0.9	0.1	40	< 0.05	1.59	3.5	0.25
E835481	< 0.005	9	21.9	2.22	0.85	6.44	1.46	2.04	< 0.1	86	218	473	4.43	3.9	33.2	1.1	1.2	0.4	50	< 0.05	1.50	9.8	0.70
E835482	< 0.005	9	21.2	2.22	0.69	6.75	1.64	1.79	< 0.1	74	80.6	343	3.25	3.7	26.2	1.0	1.2	0.3	60	< 0.05	1.49	7.8	0.63
E835483	< 0.005	< 1	37.0	1.99	0.77	7.50	1.64	1.62	0.1	115	58.6	425	4.86	0.9	25.3	1.1	1.4	0.3	70	0.06	2.42	9.6	0.66
E835484	< 0.005	< 1	25.4	2.05	1.09	6.56	1.61	2.10	< 0.1	61	107	511	4.57	3.3	40.8	1.1	1.2	0.4	50	< 0.05	1.63	11.5	0.68
E835485	< 0.005	< 1	37.6	1.80	1.43	7.29	2.05	1.95	0.1	79	183	572	4.47	2.9	87.1	1.2	1.0	0.4	60	< 0.05	2.22	16.9	0.62
E835486	< 0.005	< 1	25.3	1.82	0.73	7.19	1.37	1.61	< 0.1	80	83.4	418	3.80	5.2	24.5	1.0	1.2	0.4	40	< 0.05	1.81	9.0	0.58
E835487	< 0.005	< 1	15.8	2.25	0.54	6.18	1.76	1.81	< 0.1	44	54.8	292	1.90	3.8	23.5	1.0	1.1	0.3	20	< 0.05	0.87	8.0	0.69
E835488	< 0.005	< 1	15.3	2.21	0.48	5.87	1.68	1.82	< 0.1	50	57.4	309	1.96	4.5	23.7	1.1	1.0	0.4	< 10	< 0.05	0.87	8.1	0.74
E835489	< 0.005	< 1	27.9	1.77	0.83	7.24	2.36	1.28	< 0.1	59	51.2	346	2.60	3.6	31.1	1.1	1.3	0.3	20	< 0.05	2.30	9.2	0.65
E835490	3.24	< 1	5.9	1.38	1.23	5.31	2.30	2.92	< 0.1	68	65.0	511	3.17	1.2	27.5	1.5	1.0	0.5	50	0.88	17.5	14.4	0.68
E835491	< 0.005	< 1	15.9	1.94	0.58	5.78	1.77	1.53	< 0.1	74	70.6	353	3.60	1.1	20.1	0.9	1.0	0.3	50	< 0.05	1.38	6.5	0.64
E835492	< 0.005	< 1	24.5	1.95	0.46	6.10	1.55	1.59	< 0.1	47	61.7	578	2.85	3.4	18.9	0.9	1.1	0.3	50	< 0.05	1.39	11.5	0.63
E835493	< 0.005	< 1	28.2	1.70	0.67	6.21	1.80	1.30	< 0.1	54	62.7	349	2.88	4.5	27.7	1.0	1.1	0.3	10	< 0.05	1.84	9.6	0.65

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835494	< 0.005	< 1	10.9	1.90	0.40	5.07	1.52	1.48	< 0.1	45	78.0	339	2.37	4.1	14.5	0.8	0.9	0.3	< 10	< 0.05	1.14	5.1	0.51
E835495	< 0.005	< 1	24.4	2.04	0.70	7.02	1.47	1.61	< 0.1	77	94.9	406	3.62	5.7	28.6	1.1	1.2	0.3	< 10	< 0.05	1.62	11.0	0.59
E835496	< 0.005	< 1	17.7	2.39	0.54	7.02	1.34	1.53	< 0.1	47	66.3	279	2.43	2.8	23.3	0.7	1.1	0.2	< 10	< 0.05	1.07	7.6	0.46
E835497	< 0.005	< 1	16.0	2.46	0.51	7.53	1.46	1.57	< 0.1	48	57.1	302	2.39	3.3	22.3	0.8	1.2	0.3	< 10	< 0.05	0.93	7.5	0.51
E835498	< 0.005	12	13.5	2.61	0.59	6.27	1.47	1.83	< 0.1	52	63.4	311	2.44	3.1	21.1	0.8	1.1	0.3	50	< 0.05	0.95	7.2	0.42
E835499	< 0.005	6	16.8	2.29	0.58	6.49	1.59	1.62	< 0.1	66	57.1	301	3.02	5.0	18.8	0.8	1.1	0.3	50	< 0.05	1.25	6.4	0.51
E835500	< 0.005	< 1	19.8	2.92	0.36	6.31	3.07	1.27	< 0.1	24	12.6	281	2.22	2.1	4.5	0.9	1.3	0.4	40	< 0.05	1.08	5.3	0.60
E835201	< 0.005	< 1	22.3	2.09	1.10	7.25	1.67	2.47	0.5	74	80.5	513	2.64	0.4	64.6	1.6	1.3	0.6	60	< 0.05	2.76	21.4	0.90
E835202	< 0.005	< 1	1.1	0.04	0.16	1.48	0.07	4.55	0.8	16	17.8	218	0.85	0.1	62.3	1.1	0.3	0.4	90	0.16	0.76	7.0	0.58
E835203	< 0.005	< 1	5.0	1.09	0.10	4.16	0.34	1.77	< 0.1	20	40.1	231	0.73	0.4	5.7	0.7	0.5	0.3	50	< 0.05	1.15	1.5	0.52
E835204		< 1	7.9	0.18	0.15	2.98	0.25	2.84	0.8	23	123	304	2.35	< 0.1	171	16.7	2.2	6.1	100	0.48	1.35	40.0	12.3
E835205	< 0.005	< 1	9.2	1.71	0.40	4.95	1.50	2.36	0.2	35	49.6	296	1.22	4.1	19.7	1.2	0.9	0.4	< 10	< 0.05	1.34	4.6	0.75
E835206	< 0.005	< 1	7.6	1.39	0.33	4.13	1.20	2.50	0.2	32	45.7	318	1.14	3.2	15.6	0.9	0.7	0.3	10	< 0.05	1.07	4.1	0.59
E835207	< 0.005	2	0.8	0.04	0.22	0.35	0.08	5.30	0.2	7	4.3	562	0.23	0.1	7.9	0.2	0.1	0.1	20	< 0.05	0.21	1.5	0.10
E835208	< 0.005	12	12.3	1.07	0.37	3.19	0.95	1.27	0.1	32	65.4	159	0.94	2.2	23.4	0.9	0.7	0.3	70	< 0.05	1.58	4.0	0.50
E835209	0.006	8	12.2	0.22	0.21	3.57	0.33	3.02	0.4	35	61.2	453	2.27	0.1	76.1	4.7	1.4	1.9	130	0.30	1.68	10.8	4.60
E835210	3.17	< 1	5.7	1.40	1.24	5.25	2.31	2.84	< 0.1	84	90.4	519	3.19	1.3	26.8	1.4	1.0	0.5	50	0.87	17.9	14.2	0.69
E835211	0.009	< 1	2.4	0.08	0.18	1.55	0.15	4.24	0.5	36	22.9	624	2.12	< 0.1	43.3	1.5	0.6	0.5	150	0.20	0.50	6.1	0.87
E835212	0.010	< 1	13.5	1.04	1.17	5.04	0.38	4.35	0.8	131	103	973	4.31	0.1	190	4.9	1.1	1.7	90	0.32	2.06	37.5	3.30
E835213	< 0.005	< 1	12.3	1.36	0.39	4.29	1.35	1.87	0.2	35	40.7	329	1.38	0.2	21.3	0.9	0.8	0.3	50	< 0.05	1.38	5.5	0.64
E835214	< 0.005	< 1	9.2	0.44	0.24	2.34	0.64	2.13	0.3	29	32.6	1130	2.04	< 0.1	20.9	0.8	0.5	0.3	50	< 0.05	1.77	6.3	0.45
E835215	0.035	< 1	2.2	0.07	0.22	2.09	0.11	4.90	0.3	25	74.1	310	1.12	0.1	388	6.0	0.4	2.0	60	0.17	0.48	6.4	2.95
E835216	< 0.005	< 1	48.1	1.54	1.48	7.73	2.90	1.61	< 0.1	75	81.6	448	3.81	3.4	59.4	2.0	1.9	0.7	20	< 0.05	4.58	16.2	1.28
E835217	< 0.005	< 1	31.9	1.46	1.72	6.22	2.47	5.63	< 0.1	61	63.4	842	2.50	3.1	36.7	1.6	1.4	0.6	10	< 0.05	2.91	11.1	0.97
E835218	< 0.005	< 1	2.2	0.38	0.23	1.31	0.33	4.55	0.2	10	20.3	95	0.38	< 0.1	9.4	0.3	0.3	0.1	20	< 0.05	0.44	1.1	0.20
E835219	< 0.005	17	22.0	1.90	0.92	4.51	1.89	2.16	< 0.1	55	61.9	326	2.03	4.1	28.2	1.0	1.3	0.3	60	< 0.05	1.74	8.4	0.56
E835220	< 0.005	2	20.8	2.35	0.27	6.90	3.33	1.22	< 0.1	30	13.9	311	1.90	0.6	4.9	1.6	1.1	0.6	40	< 0.05	1.49	6.4	1.02
E835221	0.048	< 1	25.6	1.56	2.16	6.77	0.20	3.62	0.3	264	227	2040	13.0	1.8	92.5	2.4	0.4	0.8	60	0.24	1.22	41.7	0.94
E835222	< 0.005	< 1	11.9	2.25	0.67	5.84	1.52	2.03	< 0.1	57	66.5	499	2.66	2.4	24.5	1.2	1.0	0.4	50	< 0.05	0.61	6.9	0.87
E835223	< 0.005	< 1	39.4	1.96	2.15	7.13	1.63	3.05	0.1	90	125	860	4.83	2.8	85.1	1.4	1.1	0.5	60	< 0.05	2.47	23.7	0.67
E835224	< 0.005	< 1	11.2	2.19	0.39	5.74	1.69	1.56	< 0.1	39	46.8	230	1.63	0.5	16.1	0.7	1.0	0.3	40	< 0.05	0.73	5.4	0.57
E835225	< 0.005	< 1	14.3	2.33	0.50	6.32	1.69	1.85	< 0.1	52	57.5	339	2.61	3.8	25.1	0.8	1.1	0.3	60	< 0.05	0.84	7.7	0.63
E835226	0.024	< 1	28.1	1.98	0.81	6.58	1.56	1.74	< 0.1	46	82.0	429	3.62	3.9	30.5	1.1	1.1	0.4	40	< 0.05	1.69	10.2	0.66
E835227	< 0.005	< 1	19.8	1.91	1.05	6.93	1.19	2.43	< 0.1	71	141	692	4.67	3.8	43.4	1.8	1.4	0.6	50	< 0.05	1.04	13.6	1.08
E835228	< 0.005	3	16.9	2.10	1.35	6.23	1.23	3.02	< 0.1	83	183	891	6.48	5.3	47.3	2.0	1.1	0.7	50	< 0.05	1.08	14.3	1.16
E835229	< 0.005	< 1	26.9	2.15	1.38	6.50	1.43	3.00	< 0.1	75	129	798	3.92	4.0	46.6	1.9	1.1	0.6	50	< 0.05	1.76	13.3	1.02
E835230	3.17	< 1	5.9	1.41	1.26	5.33	2.39	2.87	< 0.1	58	55.4	515	3.12	1.0	27.8	1.5	0.9	0.5	50	0.88	17.7	14.0	0.70
E835231	0.005	< 1	64.1	1.89	1.22	7.34	1.45	1.68	0.1	40	82.4	498	6.30	2.4	52.4	1.0	1.2	0.3	50	< 0.05	4.26	16.2	0.57
E835232	< 0.005	< 1	24.3	2.32	1.40	6.69	1.34	3.02	< 0.1	30	92.1	637	3.54	3.1	35.8	1.6	1.0	0.6	40	< 0.05	2.64	12.4	1.00
E835233	< 0.005	< 1	13.1	2.23	0.75	5.91	1.97	2.13	< 0.1	48	72.0	390	2.16	3.6	26.6	1.2	1.0	0.4	50	< 0.05	1.18	7.1	0.87
E835234	< 0.005	< 1	11.8	2.19	0.51	6.12	1.38	1.83	< 0.1	20	64.4	342	2.23	2.4	18.4	1.0	1.0	0.3	40	< 0.05	0.87	5.5	0.58
E835235	< 0.005	< 1	12.0	2.21	0.53	6.08	1.33	1.89	< 0.1	39	70.5	352	2.17	4.8	20.1	1.1	0.9	0.4	50	< 0.05	0.93	5.8	0.66
E835236	< 0.005	16	10.4	2.21	0.45	4.47	1.66	1.83	< 0.1	43	75.4	290	1.51	5.1	18.6	0.9	0.9	0.3	40	< 0.05	0.85	5.6	0.59

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835237	< 0.005	< 1	7.0	2.28	0.39	5.51	1.66	1.90	< 0.1	41	41.1	249	1.46	4.5	14.1	1.0	1.0	0.3	50	< 0.05	0.50	4.2	0.68
E835238	< 0.005	1	10.5	2.10	0.43	6.31	1.47	1.81	< 0.1	56	55.7	304	2.34	3.7	20.6	1.0	1.2	0.4	60	< 0.05	0.63	6.1	0.72
E835239	< 0.005	< 1	10.9	2.26	0.38	6.39	1.71	1.66	< 0.1	51	49.9	243	2.20	3.0	17.3	0.8	1.1	0.3	60	< 0.05	0.89	4.9	0.57
E835240	0.006	< 1	18.0	2.34	0.21	7.14	3.11	1.18	< 0.1	27	14.6	245	1.66	0.4	5.1	1.2	1.0	0.5	< 10	< 0.05	1.45	20.0	0.79
E835241	< 0.005	< 1	11.0	2.13	0.36	6.47	1.78	1.58	< 0.1	46	39.7	334	1.86	1.0	16.7	0.9	1.1	0.3	50	< 0.05	0.81	5.4	0.66
E835242	< 0.005	< 1	10.3	2.15	0.50	6.41	1.45	1.95	< 0.1	58	67.1	342	2.38	2.9	20.9	1.1	1.2	0.4	50	< 0.05	0.76	6.4	0.72
E835243	< 0.005	< 1	9.3	2.21	0.58	6.03	1.40	2.07	< 0.1	42	110	415	2.67	4.2	23.9	1.2	1.0	0.4	10	< 0.05	0.70	7.2	0.80
E835244	< 0.005	< 1	9.2	2.09	0.39	5.73	1.65	1.69	< 0.1	40	49.3	268	1.65	4.0	18.5	1.0	1.0	0.3	20	< 0.05	0.56	5.5	0.66
E835245	< 0.005	< 1	21.8	2.06	0.73	5.91	1.59	1.95	< 0.1	72	63.7	350	2.84	3.9	29.4	1.2	1.1	0.4	20	< 0.05	1.52	8.2	0.57
E835246	0.042	< 1	18.4	1.77	0.91	6.36	1.09	2.17	< 0.1	92	97.5	620	4.13	1.7	35.5	1.4	1.1	0.5	40	< 0.05	1.55	10.7	0.80
E835247	< 0.005	12	19.9	1.29	0.48	4.32	0.68	0.73	0.1	83	77.5	245	2.97	2.3	22.5	0.5	1.1	0.2	170	0.34	1.28	6.1	0.29
E835248	< 0.005	10	16.8	1.78	1.01	6.55	1.06	2.30	< 0.1	83	123	571	4.02	4.3	34.1	1.4	1.2	0.5	80	< 0.05	1.11	10.7	0.84
E835249	< 0.005	5	29.8	2.52	0.77	7.65	1.98	1.68	< 0.1	58	43.0	366	2.69	4.0	24.9	0.9	1.1	0.3	50	< 0.05	1.81	8.6	0.66
E835250	3.23	< 1	5.9	1.35	1.25	5.29	2.52	2.96	< 0.1	66	68.2	536	3.18	1.2	28.5	1.4	0.9	0.5	40	0.90	18.2	14.4	0.72
E835251		< 1	45.1	1.96	1.38	7.05	1.70	2.11	< 0.1	98	137	595	4.29	4.1	60.4	1.0	1.0	0.3	60	< 0.05	3.92	14.8	0.50
E835252	< 0.005	< 1	35.5	2.31	0.83	7.16	1.69	1.96	< 0.1	54	53.9	330	2.12	4.3	40.2	1.0	1.2	0.3	50	< 0.05	2.25	9.1	0.60
E835253	0.007	< 1	29.2	2.15	0.71	6.80	1.58	1.80	< 0.1	59	72.8	313	2.59	3.8	44.3	0.9	1.3	0.3	60	< 0.05	2.46	10.2	0.54
E835254	< 0.005	< 1	31.5	2.10	0.66	7.17	1.62	1.80	< 0.1	56	86.7	322	2.73	4.3	49.5	0.9	1.1	0.3	40	< 0.05	2.46	10.9	0.56
E835255	< 0.005	< 1	110	1.37	1.11	6.85	0.98	1.92	0.2	94	143	456	6.68	3.0	116	1.0	1.1	0.3	30	< 0.05	7.01	23.1	0.50
E835256	0.017	< 1	69.4	1.37	0.75	6.07	1.49	1.36	< 0.1	19	66.6	320	2.49	2.1	183	1.0	0.9	0.3	30	< 0.05	9.35	12.7	0.53
E835257	0.007	< 1	36.4	1.24	2.25	6.02	2.14	8.31	< 0.1	57	49.7	537	2.75	3.0	35.1	1.5	1.4	0.5	10	< 0.05	3.15	11.0	0.93
E835258	< 0.005	14	16.9	2.49	0.55	4.69	1.75	1.98	< 0.1	44	77.0	372	1.76	4.2	34.0	0.8	1.0	0.3	40	< 0.05	1.17	7.9	0.46
E835259	0.010	5	60.5	2.03	1.23	6.69	1.33	2.32	< 0.1	81	124	659	3.82	4.9	88.9	1.3	1.2	0.5	40	< 0.05	2.80	16.6	0.74
E835260	< 0.005	< 1	22.7	2.67	0.26	7.37	2.39	1.20	< 0.1	23	11.9	269	2.10	7.2	3.7	0.6	1.1	0.3	50	< 0.05	1.59	4.2	0.71
E835261	< 0.005	< 1	82.0	1.79	1.51	6.99	1.37	2.42	< 0.1	103	213	975	5.14	6.6	116	1.4	1.1	0.5	50	< 0.05	3.72	22.3	0.82
E835262	< 0.005	< 1	48.5	1.65	1.01	7.63	1.68	1.45	< 0.1	67	99.4	407	3.66	3.2	59.6	0.9	1.2	0.3	60	< 0.05	3.44	15.0	0.51
E835263	< 0.005	< 1	23.4	2.19	1.17	6.55	1.89	2.24	< 0.1	63	97.3	488	2.69	4.2	53.2	1.2	1.1	0.4	60	< 0.05	1.85	11.7	0.73
E835264		< 1	67.3	1.92	1.36	7.14	1.58	2.29	< 0.1	63	101	822	3.77	3.3	62.3	1.2	1.2	0.4	30	< 0.05	3.04	18.0	0.70
E835265	< 0.005	< 1	71.2	1.96	1.35	7.25	1.66	2.21	< 0.1	43	86.5	823	3.80	2.7	60.8	1.2	1.2	0.4	40	< 0.05	3.11	19.3	0.74
E835266	< 0.005	< 1	44.6	2.63	1.09	6.87	0.52	1.79	< 0.1	47	19.7	416	2.89	3.1	33.2	1.0	1.0	0.4	40	< 0.05	1.30	8.3	0.77
E835267	0.005	1	22.3	2.25	0.80	6.44	1.59	1.85	< 0.1	69	90.1	354	2.75	4.0	34.6	0.9	1.0	0.3	70	< 0.05	2.15	7.9	0.52
E835268	< 0.005	< 1	19.1	2.17	1.15	6.53	1.58	2.30	< 0.1	97	109	502	3.45	3.9	52.9	1.0	1.0	0.3	60	< 0.05	2.06	12.6	0.52
E835269		< 1	91.9	1.53	1.66	6.86	1.15	2.62	0.3	98	189	825	5.96	3.2	188	1.3	1.2	0.4	70	< 0.05	7.25	40.2	0.68
E835270	3.35	< 1	5.7	1.34	1.19	5.09	2.35	2.76	< 0.1	55	53.0	505	3.00	1.0	26.0	1.4	0.9	0.5	50	0.87	17.0	13.7	0.67
E835271	< 0.005	< 1	19.2	2.39	0.49	6.61	1.60	2.21	< 0.1	46	59.1	371	1.89	3.6	46.1	1.0	1.0	0.3	40	< 0.05	1.36	9.9	0.65
E835272	< 0.005	< 1	36.6	1.43	1.17	5.76	0.75	2.64	0.1	137	81.2	652	6.88	2.1	129	1.6	0.6	0.5	50	< 0.05	1.49	28.0	0.60
E835273		< 1	56.1	1.94	1.38	7.65	1.13	2.25	0.2	69	111	624	4.24	2.9	80.7	1.5	1.3	0.5	70	< 0.05	3.39	24.6	0.83
E835274	< 0.005	< 1	43.8	1.25	1.65	6.87	2.44	4.20	0.2	49	59.8	485	3.27	2.8	44.1	1.6	1.7	0.6	50	< 0.05	3.89	13.8	1.08
E835275	< 0.005	14	36.5	2.62	1.24	5.16	1.55	1.96	< 0.1	76	149	438	3.18	3.4	49.9	0.6	1.1	0.2	70	< 0.05	2.36	11.7	0.29
E835276	< 0.005	2	42.6	2.03	1.37	6.64	1.13	2.91	0.1	90	106	819	3.89	2.9	56.7	1.3	0.8	0.5	60	< 0.05	4.52	34.1	0.66
E835277	< 0.005	< 1	13.5	2.15	0.59	5.82	1.48	2.16	< 0.1	48	81.4	407	2.08	4.1	39.0	1.7	1.0	0.6	80	< 0.05	1.19	8.3	1.22
E835278	< 0.005	< 1	17.4	2.27	0.87	6.28	1.60	2.36	0.1	63	75.0	644	2.58	3.6	47.2	1.8	1.3	0.7	70	< 0.05	1.50	13.4	1.28
E835279	< 0.005	< 1	14.7	2.51	0.99	6.52	1.45	2.46	< 0.1	51	80.5	447	2.59	4.0	35.0	1.1	1.1	0.4	40	< 0.05	0.75	8.2	0.61

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835280	< 0.005	< 1	20.9	2.54	0.25	6.77	3.09	1.06	< 0.1	23	10.9	256	1.96	2.9	4.3	0.7	0.9	0.3	< 10	< 0.05	1.53	8.9	0.66
E835281	< 0.005	< 1	25.6	2.98	0.77	7.52	2.06	2.05	< 0.1	40	51.0	311	1.77	2.7	36.5	0.7	1.1	0.2	40	< 0.05	1.89	7.8	0.53
E835282	< 0.005	< 1	54.6	2.34	1.28	7.19	1.34	2.55	< 0.1	34	89.7	534	3.43	2.4	78.8	1.0	1.0	0.3	50	< 0.05	3.11	18.0	0.66
E835283	< 0.005	< 1	45.6	> 3.00	1.49	7.89	0.48	1.80	< 0.1	39	36.2	218	2.04	2.9	38.2	0.6	0.9	0.2	60	< 0.05	2.15	8.9	0.43
E835284	< 0.005	< 1	22.4	1.86	1.39	5.83	1.19	3.19	0.3	88	140	1110	4.25	4.2	84.7	2.8	1.1	1.0	80	< 0.05	3.53	16.5	1.67
E835285	< 0.005	11	76.8	1.88	1.97	5.37	0.37	3.19	< 0.1	125	213	805	5.62	3.1	292	0.9	1.0	0.3	50	< 0.05	0.66	43.0	0.37
E835286	< 0.005	16	21.5	2.37	1.11	6.28	1.63	2.12	< 0.1	58	115	390	2.32	2.6	63.6	0.8	1.1	0.3	50	< 0.05	1.84	9.9	0.58
E835287	< 0.005	5	18.0	2.42	0.85	6.38	1.69	2.01	< 0.1	45	70.8	307	1.80	2.8	47.2	0.8	1.1	0.3	50	< 0.05	1.64	7.8	0.58
E835288	< 0.005	< 1	28.8	2.12	0.99	7.09	1.47	1.84	< 0.1	60	82.9	353	2.88	3.7	63.9	0.7	1.1	0.3	70	< 0.05	1.91	12.8	0.51
E835289	< 0.005	< 1	15.8	1.75	2.03	5.23	1.73	6.15	< 0.1	38	36.6	312	1.53	3.5	23.4	1.1	1.1	0.4	80	< 0.05	1.21	6.2	0.76
E835290	3.14	< 1	5.8	1.35	1.19	5.00	2.28	2.70	< 0.1	68	53.2	482	2.91	1.2	26.0	1.3	0.9	0.5	50	0.83	17.3	13.5	0.65
E835291	< 0.005	< 1	16.7	1.96	1.45	5.90	1.85	3.83	< 0.1	43	39.3	305	1.65	3.7	26.1	1.1	1.1	0.4	50	< 0.05	1.34	7.4	0.79
E835292	< 0.005	< 1	15.0	1.84	1.84	5.43	1.72	5.80	< 0.1	41	39.1	323	1.60	3.7	23.3	1.2	1.1	0.4	70	< 0.05	1.19	6.2	0.79
E835293	< 0.005	< 1	16.9	2.07	1.59	6.16	1.91	4.20	< 0.1	49	54.6	368	1.92	2.5	25.5	1.3	1.2	0.5	50	< 0.05	1.36	7.4	0.89
E835294	< 0.005	< 1	17.3	1.78	1.68	5.39	1.69	4.93	< 0.1	43	33.4	288	1.52	0.1	23.8	1.2	1.1	0.4	60	< 0.05	1.31	6.8	0.79
E835295	< 0.005	6	10.9	2.32	0.48	6.12	1.87	1.96	< 0.1	43	49.3	317	1.93	3.3	21.2	1.0	1.1	0.4	50	< 0.05	0.88	6.0	0.78
E835296	< 0.005	18	18.4	2.01	1.45	5.36	1.97	3.13	< 0.1	49	63.1	333	1.79	4.1	26.6	1.1	1.2	0.4	30	< 0.05	1.47	7.8	0.68
E835297	< 0.005	29	41.8	1.70	1.27	6.16	2.23	1.70	< 0.1	76	101	552	3.41	3.6	54.2	1.4	1.5	0.5	50	< 0.05	3.70	14.4	0.84
E835298	< 0.005	15	38.6	2.54	0.64	5.82	1.78	2.03	0.1	60	85.1	364	2.76	4.6	56.7	1.0	1.4	0.4	50	< 0.05	2.37	9.6	0.61
E835299	0.215	14	46.3	2.14	0.94	5.25	1.83	2.04	0.2	75	90.7	501	3.53	6.3	72.3	1.5	1.4	0.5	50	< 0.05	3.08	12.6	0.86
E835300	< 0.005	5	21.8	2.70	0.19	6.01	2.64	1.05	< 0.1	21	11.3	241	1.78	7.3	2.8	0.5	1.1	0.3	30	< 0.05	1.70	4.3	0.36
E835301	< 0.005	10	19.3	2.33	0.64	4.31	1.56	2.00	< 0.1	50	74.2	342	2.09	3.2	43.2	0.6	0.9	0.2	40	< 0.05	1.29	10.6	0.38
E835302	< 0.005	9	24.0	2.02	1.18	4.77	1.37	2.65	0.2	91	164	946	4.28	5.3	60.3	1.2	1.1	0.4	70	< 0.05	2.28	16.1	0.55
E835303	< 0.005	9	49.0	1.84	1.16	5.13	0.99	3.04	0.3	91	137	516	4.02	3.1	114	1.8	1.1	0.6	60	< 0.05	2.41	16.9	0.86
E835304	0.006	16	30.8	2.24	0.76	2.45	1.15	2.12	< 0.1	87	87.9	438	3.06	3.5	63.2	0.5	0.9	0.2	40	< 0.05	1.28	15.4	0.18
E835305	< 0.005	13	45.5	1.45	1.09	7.06	0.99	1.39	< 0.1	121	162	500	3.53	3.1	61.4	0.9	1.1	0.3	60	< 0.05	1.69	15.8	0.42
E835306	2.53	18	41.2	1.48	1.42	5.64	1.31	1.75	0.1	80	160	730	8.47	3.7	61.1	0.9	0.9	0.3	50	0.25	3.93	12.9	0.43
E835307	< 0.005	19	53.4	2.26	1.50	6.96	1.43	2.51	< 0.1	96	163	595	3.84	3.4	77.3	0.9	1.0	0.3	50	< 0.05	3.82	24.7	0.50
E835308	< 0.005	3	20.9	1.66	1.77	5.51	0.96	3.30	0.1	62	317	1190	7.20	8.7	120	2.3	0.9	0.8	40	< 0.05	3.01	19.4	1.05
E835309	0.005	11	49.8	1.66	1.64	6.24	1.05	2.79	0.1	61	219	955	5.82	6.0	186	2.1	1.0	0.7	70	< 0.05	6.94	23.1	0.99
E835310	3.48	2	36.7	0.31	1.07	7.07	2.16	3.06	1.1	201	13.1	1240	5.83	2.0	12.4	1.8	1.5	0.6	110	4.96	7.13	21.1	1.15
E835311	0.005	12	42.8	1.97	1.10	7.23	1.44	1.97	< 0.1	75	102	456	3.61	3.5	73.4	1.2	1.2	0.4	70	< 0.05	2.66	18.8	0.58
E835312	0.050	12	46.8	1.97	1.16	7.57	1.50	2.03	< 0.1	80	105	480	3.76	3.6	77.5	1.0	1.2	0.4	50	< 0.05	2.76	20.6	0.58
E835313	< 0.005	8	36.0	1.82	0.84	6.77	1.49	1.70	< 0.1	63	73.6	332	2.83	2.9	53.0	0.8	1.1	0.3	40	< 0.05	2.45	13.7	0.51
E835314	0.038	10	22.3	0.60	1.90	8.48	0.31	2.81	0.3	125	380	845	9.28	1.5	241	1.6	1.3	0.6	90	0.27	6.80	155	1.27
E835315	< 0.005	12	18.8	2.42	0.49	3.73	1.52	1.87	< 0.1	53	80.4	317	2.01	3.9	43.1	0.6	1.1	0.2	50	< 0.05	1.27	9.6	0.30
E835316	0.005	17	76.2	1.90	1.34	5.77	1.26	2.51	0.3	76	131	1260	3.47	3.1	77.7	1.2	1.0	0.4	60	< 0.05	9.73	27.3	0.60
E835317	0.012	10	55.0	0.71	0.50	6.07	0.58	2.35	0.3	127	211	575	7.49	2.2	264	2.6	1.2	0.9	100	0.26	5.03	71.7	1.76
E835318	< 0.005	4	50.3	1.51	1.09	6.47	0.74	2.40	0.1	89	101	498	4.43	2.5	120	1.3	0.9	0.4	80	< 0.05	1.74	22.8	0.66
E835319	0.009	< 1	47.9	2.05	1.09	7.38	1.78	2.05	< 0.1	94	109	498	4.71	5.1	50.5	1.1	1.2	0.4	50	< 0.05	2.77	14.7	0.65
E835320	< 0.005	< 1	17.7	2.38	0.19	7.35	3.51	1.21	< 0.1	24	12.6	226	1.58	< 0.1	2.9	1.4	1.0	0.6	20	< 0.05	1.29	6.1	1.03
E835321	< 0.005	< 1	54.7	1.67	1.04	7.61	1.54	1.75	< 0.1	75	92.7	463	5.21	4.2	67.3	1.2	1.4	0.4	50	< 0.05	3.38	18.1	0.63
E835322	< 0.005	< 1	108	1.76	1.90	8.44	1.08	2.26	< 0.1	29	65.9	438	3.97	2.4	93.5	1.1	1.3	0.4	40	< 0.05	2.92	20.1	0.82



## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835323	< 0.005	< 1	68.1	1.59	1.19	7.41	1.62	2.11	< 0.1	38	74.7	632	4.25	3.5	81.8	2.1	1.4	0.7	50	< 0.05	3.94	17.4	1.43
E835324	0.143	< 1	32.3	2.27	1.14	6.35	1.53	2.35	< 0.1	49	93.2	404	2.75	3.3	55.5	0.9	1.1	0.3	60	< 0.05	2.01	12.1	0.58
E835325	< 0.005	< 1	85.5	1.35	1.59	8.42	1.50	1.74	< 0.1	76	107	502	5.96	3.4	141	1.1	1.4	0.4	50	< 0.05	5.74	35.4	0.59
E835326	< 0.005	25	48.6	1.75	1.11	4.17	1.66	1.17	< 0.1	76	112	372	3.48	4.1	70.0	0.6	1.2	0.2	50	< 0.05	2.77	15.7	0.27
E835327	0.055	17	39.3	1.76	1.19	5.99	1.07	1.88	0.3	83	184	463	4.01	3.7	55.2	1.0	1.1	0.4	90	< 0.05	3.10	12.2	0.51
E835328	0.014	< 1	47.7	1.88	1.36	7.44	1.20	2.09	0.4	85	159	562	4.53	3.7	70.6	1.2	1.4	0.4	80	< 0.05	3.51	16.3	0.69
E835329	0.006	< 1	35.6	1.97	1.12	7.65	1.89	2.31	< 0.1	54	68.3	453	2.57	2.6	63.9	0.9	1.1	0.3	30	< 0.05	2.60	13.6	0.54
E835330	3.15	< 1	6.0	1.43	1.26	5.45	2.50	3.02	< 0.1	49	53.7	504	3.14	1.0	28.3	1.4	1.0	0.5	50	0.91	18.2	14.3	0.70
E835331	< 0.005	< 1	24.0	1.48	1.93	5.50	1.80	7.48	< 0.1	39	39.3	421	2.11	2.9	33.6	1.2	1.1	0.4	40	< 0.05	2.01	9.0	0.84
E835332	< 0.005	< 1	33.1	1.89	0.99	6.73	1.39	1.79	< 0.1	41	127	385	3.12	3.5	59.1	0.9	1.1	0.3	70	< 0.05	2.68	11.2	0.51
E835333	< 0.005	< 1	41.2	1.91	1.01	7.92	1.20	1.70	< 0.1	60	109	368	3.76	6.1	90.0	0.9	1.1	0.3	60	< 0.05	2.50	18.6	0.55
E835334	< 0.005	< 1	21.3	2.32	0.89	7.08	1.73	1.96	< 0.1	53	61.6	342	2.25	0.3	47.1	0.9	1.2	0.3	60	< 0.05	1.59	10.4	0.62
E835335	0.006	15	38.7	1.65	0.99	7.08	1.39	1.63	< 0.1	66	108	350	3.58	2.6	116	1.1	1.8	0.4	50	< 0.05	2.61	20.7	0.77
E835336	< 0.005	6	22.7	2.17	0.94	6.38	1.55	1.98	< 0.1	67	113	439	3.15	5.3	36.3	1.0	1.1	0.3	50	< 0.05	1.79	9.6	0.56
E835337	< 0.005	< 1	27.6	1.85	0.73	6.17	1.66	1.52	< 0.1	53	66.2	297	2.49	3.4	42.8	0.8	1.0	0.2	40	< 0.05	1.83	10.5	0.50
E835338	< 0.005	< 1	40.3	2.30	1.18	6.46	1.43	1.99	< 0.1	66	97.1	417	3.03	3.7	56.2	0.9	1.0	0.3	60	< 0.05	2.89	13.5	0.48
E835339	< 0.005	< 1	23.7	2.44	0.93	6.87	1.60	1.99	< 0.1	49	89.7	394	2.42	4.8	38.5	1.0	1.0	0.3	40	< 0.05	1.22	8.7	0.60
E835340	< 0.005	< 1	17.2	2.40	0.22	7.37	4.05	1.25	< 0.1	30	11.1	249	1.72	0.4	3.8	1.4	1.0	0.6	< 10	< 0.05	1.25	24.9	1.00
E835341	< 0.005	< 1	21.6	2.23	0.76	5.87	1.43	1.78	< 0.1	28	68.7	317	2.07	3.7	34.7	0.8	0.9	0.3	40	< 0.05	1.11	7.6	0.50
E835342	0.006	< 1	16.5	1.92	1.71	5.53	1.87	5.24	< 0.1	41	52.1	389	1.76	3.7	24.3	1.2	1.2	0.4	60	< 0.05	1.32	7.1	0.82
E835343	< 0.005	< 1	19.4	1.84	1.71	5.83	1.97	4.00	< 0.1	40	48.9	410	1.77	3.5	29.5	1.3	1.1	0.4	40	< 0.05	1.58	9.0	0.82
E835344	0.007	42	46.2	1.50	1.12	3.68	1.86	1.06	< 0.1	97	98.5	718	3.69	3.6	62.5	0.9	1.6	0.3	60	< 0.05	3.30	17.9	0.42
E835345	< 0.005	18	27.7	2.33	1.07	6.51	1.64	1.99	< 0.1	59	94.5	365	2.48	3.5	48.0	0.8	1.0	0.3	50	< 0.05	2.10	10.0	0.51
E835346	< 0.005	< 1	79.3	1.60	1.94	7.37	1.27	2.15	< 0.1	75	130	556	4.19	4.0	128	1.1	0.9	0.3	60	< 0.05	4.39	25.6	0.48
E835347	< 0.005	< 1	28.7	1.82	1.10	6.33	1.28	1.94	< 0.1	138	86.4	438	4.94	3.4	48.7	1.0	0.8	0.4	50	< 0.05	1.33	13.1	0.55
E835348	< 0.005	< 1	28.3	1.81	1.03	6.34	1.49	1.69	< 0.1	94	75.5	389	4.38	2.3	43.3	0.9	0.9	0.3	50	< 0.05	1.52	11.1	0.53
E835349	< 0.005	< 1	11.0	2.49	0.66	6.17	1.64	2.37	< 0.1	57	94.6	430	2.46	0.6	30.0	1.5	1.1	0.5	40	< 0.05	1.54	6.9	0.93
E835350	3.18	< 1	6.0	1.45	1.27	5.27	2.68	2.97	< 0.1	34	49.8	522	3.13	0.9	26.8	1.5	1.0	0.5	30	0.91	17.9	14.5	0.70
E832156	0.021	< 1	18.1	> 3.00	0.59	7.63	1.93	2.41	< 0.1	47	52.1	273	2.04	1.9	30.8	0.5	1.4	0.2	20	< 0.05	1.17	6.7	0.39
E832157	< 0.005	< 1	42.8	2.00	1.83	6.66	0.83	2.66	0.1	87	185	791	5.95	4.9	88.3	1.9	1.0	0.6	10	< 0.05	2.00	18.6	0.88
E832158	< 0.005	< 1	26.9	2.09	0.70	6.95	1.38	1.81	< 0.1	43	69.0	333	2.63	3.3	39.2	0.9	1.1	0.3	< 10	< 0.05	1.59	10.0	0.56
E832159	< 0.005	9	1.2	0.06	0.20	0.53	0.09	4.30	0.3	7	6.0	24	0.24	0.3	16.1	0.2	0.2	0.1	90	< 0.05	0.24	0.6	0.10
E832160	< 0.005	7	23.1	2.44	0.29	7.29	2.94	1.19	< 0.1	30	26.9	271	1.90	11.2	6.5	1.1	1.1	0.5	30	< 0.05	1.77	4.6	0.84
E832161	< 0.005	11	25.0	2.64	1.13	6.83	1.70	2.38	< 0.1	69	87.9	447	2.48	3.7	45.3	1.0	1.1	0.3	50	< 0.05	5.70	9.9	0.69
E832162	< 0.005	1	6.0	0.29	0.18	2.50	0.24	3.65	0.6	15	32.8	472	0.54	0.1	25.0	2.0	0.6	0.7	150	0.09	1.29	3.8	1.49
E832163	< 0.005	< 1	25.5	2.33	0.55	7.25	1.54	1.90	< 0.1	42	54.7	383	2.99	3.8	31.6	1.2	1.3	0.4	50	< 0.05	1.56	9.4	0.65
E832164	< 0.005	< 1	27.2	2.27	0.76	6.74	1.34	1.97	< 0.1	50	67.4	360	3.50	3.5	32.3	1.0	1.1	0.4	50	< 0.05	1.77	9.5	0.66
E832165	< 0.005	< 1	16.8	2.20	0.95	5.90	1.55	2.65	< 0.1	41	69.8	431	1.82	2.1	28.1	1.1	1.0	0.4	60	< 0.05	1.60	7.7	0.75
E832166	< 0.005	< 1	32.5	2.24	0.56	7.29	1.57	1.69	< 0.1	43	72.3	285	2.81	3.3	32.1	0.9	1.3	0.3	30	< 0.05	2.11	8.2	0.58
E832167	< 0.005	< 1	55.1	1.91	1.51	7.06	3.57	1.38	< 0.1	20	37.4	771	2.64	1.7	16.0	0.3	0.7	0.1	< 10	< 0.05	2.06	11.9	0.38
E832168	< 0.005	< 1	47.7	2.58	2.05	7.15	0.58	2.82	< 0.1	52	206	859	3.12	3.9	113	1.2	0.8	0.4	20	< 0.05	1.92	21.4	0.51
E832169	< 0.005	< 1	20.4	2.02	1.33	6.01	1.25	3.05	0.1	71	105	552	2.93	2.0	77.4	3.2	1.1	1.2	< 10	0.08	3.24	11.9	2.19
E832170	3.19	11	5.8	1.42	1.03	3.11	2.40	2.76	< 0.1	98	72.0	518	3.04	1.4	26.7	0.8	1.0	0.3	50	0.89	15.4	14.2	0.35

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832171	< 0.005	25	67.7	1.46	1.24	7.11	1.28	1.96	0.2	71	143	633	3.95	3.7	163	1.3	1.1	0.5	70	< 0.05	7.43	27.5	0.71
E832172	0.007	9	44.5	0.23	3.56	9.31	0.30	2.89	< 0.1	226	265	1740	7.51	1.5	192	1.9	0.6	0.7	50	< 0.05	2.66	48.8	0.95
E832173	< 0.005	< 1	31.8	2.36	0.59	7.51	1.62	1.75	< 0.1	49	56.6	303	2.30	3.7	40.7	0.8	1.3	0.3	50	< 0.05	1.63	9.4	0.53
E832174	0.781	< 1	34.8	2.29	0.91	7.07	1.71	1.80	< 0.1	43	47.4	339	2.43	3.1	46.2	0.9	1.2	0.3	30	< 0.05	1.91	12.4	0.61
E832175	0.006	< 1	29.0	1.53	1.15	6.14	1.12	2.08	< 0.1	77	82.1	593	5.56	2.3	40.8	1.1	0.9	0.4	50	0.47	2.54	14.0	0.49
E832176	< 0.005	< 1	41.2	1.72	1.55	7.38	1.11	2.13	< 0.1	34	178	494	3.92	2.8	66.7	1.1	1.2	0.4	70	< 0.05	3.16	14.5	0.58
E832177	< 0.005	< 1	37.0	1.53	0.96	6.05	1.78	2.02	0.2	50	69.2	358	2.30	2.8	35.1	1.3	1.3	0.5	50	< 0.05	3.02	9.4	0.82
E832178	0.135	< 1	53.1	2.17	1.33	6.59	1.41	2.45	< 0.1	32	102	643	3.79	2.8	54.2	1.2	1.1	0.4	30	< 0.05	3.67	17.5	0.64
E832179	< 0.005	15	1.3	0.06	0.19	0.80	0.09	5.18	0.4	13	13.7	384	0.29	< 0.1	44.0	1.1	0.3	0.4	160	0.10	0.47	2.4	0.59
E832180	< 0.005	< 1	19.2	2.38	0.24	7.23	2.46	1.19	< 0.1	28	8.0	261	1.74	0.3	4.3	1.5	1.1	0.6	40	< 0.05	1.39	4.2	1.04
E832181	0.029	< 1	20.9	2.25	1.06	6.65	1.20	2.25	< 0.1	49	86.2	441	2.25	3.7	31.9	1.2	1.2	0.4	40	< 0.05	1.66	9.0	0.60
E832182	< 0.005	< 1	5.6	> 3.00	0.64	8.15	1.46	2.72	< 0.1	49	52.5	351	1.81	8.1	27.7	0.9	1.2	0.4	40	< 0.05	0.56	5.1	0.40
E832183	< 0.005	< 1	31.9	1.58	0.97	6.07	1.22	2.26	0.2	82	88.2	441	2.37	1.2	38.6	3.5	1.7	1.4	90	< 0.05	3.24	11.7	3.22
E832184	< 0.005	< 1	34.4	2.25	1.43	7.44	1.46	2.40	< 0.1	39	100	531	2.96	3.4	60.9	1.4	1.1	0.5	50	< 0.05	2.23	16.2	0.89
E832185	< 0.005	< 1	26.1	2.04	1.11	6.12	1.78	3.80	< 0.1	37	49.9	356	1.68	2.5	28.0	1.1	1.3	0.4	50	< 0.05	1.69	8.3	0.85
E832186	< 0.005	< 1	14.9	1.97	1.66	5.74	1.33	4.38	< 0.1	44	48.3	367	1.64	4.5	23.7	1.2	1.1	0.4	50	< 0.05	1.16	6.8	0.80
E832187	0.011	< 1	26.4	2.43	1.88	7.43	0.50	3.23	0.3	136	123	1030	6.72	2.3	76.1	1.6	0.7	0.6	30	< 0.05	1.87	28.6	0.56
E832188	0.016	7	16.1	> 3.00	1.47	5.34	0.25	3.49	0.1	210	99.2	1750	5.52	3.0	53.2	1.0	0.7	0.3	< 10	< 0.05	0.62	31.7	0.23
E832189	< 0.005	10	31.9	2.41	0.86	7.37	1.55	1.90	< 0.1	52	81.3	353	2.49	3.7	59.2	0.9	1.2	0.3	70	< 0.05	2.14	12.1	0.55
E832190	3.21	2	6.5	1.48	1.36	5.64	1.42	2.98	< 0.1	72	63.6	512	3.10	1.3	27.7	1.4	1.0	0.5	50	0.89	17.8	14.5	0.71
E832191	0.009	< 1	32.9	2.37	0.69	6.74	1.33	1.83	< 0.1	44	53.6	333	2.24	3.4	36.2	1.1	1.8	0.4	60	< 0.05	1.62	8.4	0.80
E832192	< 0.005	< 1	27.2	2.67	0.99	7.23	1.41	2.17	< 0.1	33	60.4	394	2.46	3.9	29.3	1.1	1.1	0.3	40	< 0.05	2.51	7.9	0.62
E832193	< 0.005	< 1	47.6	1.94	0.97	7.48	0.72	1.98	0.1	76	119	501	5.05	2.9	447	1.2	1.3	0.4	50	< 0.05	3.29	30.5	0.79
E832194	< 0.005	< 1	26.2	1.87	2.58	8.40	0.16	5.07	0.1	190	207	2180	6.63	2.1	104	2.1	0.5	0.7	20	< 0.05	0.58	37.3	0.83
E832195	< 0.005	< 1	54.4	1.90	1.06	7.06	1.47	2.35	0.2	43	80.5	653	3.29	2.8	96.6	1.6	1.3	0.6	30	< 0.05	4.02	15.5	0.99
E832196	< 0.005	< 1	30.6	2.66	1.74	6.95	0.42	2.90	< 0.1	46	196	683	2.65	3.1	87.1	1.0	0.8	0.3	< 10	< 0.05	1.34	14.1	0.44
E832197	< 0.005	< 1	9.5	> 3.00	0.96	7.22	0.79	3.03	< 0.1	22	57.7	591	1.59	2.6	32.2	0.8	1.0	0.2	20	< 0.05	2.35	7.0	0.29
E832242	< 0.005	12	6.7	0.14	0.22	1.83	0.29	3.38	0.5	16	31.6	191	0.91	1.0	81.3	2.4	0.6	0.9	120	0.18	2.64	5.3	1.66
E832243	< 0.005	8	6.6	0.66	0.57	3.01	0.12	3.75	0.6	103	42.6	622	2.13	1.1	84.7	4.6	0.8	1.7	110	0.24	0.81	21.3	3.56
E832244	< 0.005	19	1.0	0.03	0.16	0.89	0.07	5.11	0.3	11	12.7	95	0.21	< 0.1	40.2	1.2	0.3	0.4	170	0.12	0.47	4.3	0.74
E832245	0.017	< 1	14.6	0.24	0.23	3.82	0.26	3.03	0.6	30	62.8	1300	1.76	< 0.1	200	3.1	0.9	1.2	110	0.20	1.84	19.0	2.54
E832246	< 0.005	< 1	1.5	0.04	0.11	1.28	0.07	4.04	0.3	16	21.7	1020	1.43	< 0.1	40.3	1.4	0.4	0.5	70	0.17	0.50	6.0	0.94
E832247	< 0.005	< 1	20.3	0.81	0.40	3.55	0.32	2.17	0.3	61	50.8	229	0.98	0.6	19.7	0.8	0.7	0.3	30	< 0.05	2.02	2.8	0.51
E832248	0.005	5	0.8	0.02	0.12	0.52	0.05	6.08	0.2	4	20.0	120	0.21	< 0.1	42.1	0.5	0.2	0.2	60	0.06	0.34	0.5	0.32
E832249	0.015	< 1	4.2	0.10	0.22	1.16	0.15	4.08	0.5	12	99.6	1590	0.78	< 0.1	312	1.0	0.3	0.3	< 10	0.17	1.95	9.0	0.53
E832250	3.22	< 1	6.3	1.52	1.29	5.28	1.62	2.80	< 0.1	28	63.9	505	3.09	0.6	26.6	1.3	1.0	0.5	50	0.92	17.2	13.8	0.69
E832251	0.016	< 1	0.9	0.03	0.10	0.77	0.05	2.01	0.3	8	8.3	75	0.71	0.2	11.4	0.6	0.3	0.2	30	0.05	0.16	2.3	0.35
E832252	0.005	5	3.0	0.09	0.37	0.95	0.13	6.63	0.6	16	18.6	340	0.52	0.6	123	0.6	0.3	0.2	140	0.16	0.51	4.2	0.28
E832253	< 0.005	25	52.6	1.44	1.45	7.68	1.68	1.48	< 0.1	75	97.4	678	3.76	3.6	52.7	2.1	2.0	0.7	60	< 0.05	4.34	15.2	1.23
E832254	0.007	18	1.0	0.02	0.26	0.44	0.07	5.63	0.3	19	30.8	118	0.22	0.1	11.0	0.3	0.2	0.1	120	< 0.05	0.21	0.7	0.13
E832255	< 0.005	< 1	27.7	1.41	1.89	5.29	1.43	5.61	0.1	44	46.3	344	1.93	2.8	26.0	1.2	1.2	0.5	50	< 0.05	2.02	8.2	0.76
E832256	< 0.005	< 1	15.7	1.60	2.02	4.61	1.26	6.51	< 0.1	34	29.4	419	1.44	3.0	21.4	1.0	1.1	0.4	50	< 0.05	1.09	6.1	0.68
E832257	< 0.005	< 1	5.8	0.34	0.24	1.51	0.42	2.68	0.2	14	13.1	294	0.75	0.1	11.6	0.4	0.4	0.1	50	< 0.05	1.27	2.5	0.23

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832258	< 0.005	< 1	44.9	1.39	1.35	6.73	2.17	1.96	0.1	33	61.3	399	2.93	2.5	44.9	1.5	1.6	0.5	20	< 0.05	3.60	12.3	0.88
E832259	< 0.005	< 1	4.3	0.04	0.23	1.87	0.15	2.03	0.3	10	27.8	174	1.31	< 0.1	23.5	1.1	0.7	0.5	80	0.19	1.05	3.8	0.98
E832260	< 0.005	< 1	20.0	2.58	0.27	7.35	3.44	1.22	< 0.1	27	29.3	260	1.83	0.4	5.3	1.4	1.0	0.6	< 10	< 0.05	1.30	13.4	0.99
E832261	< 0.005	< 1	39.7	1.11	2.31	5.61	1.88	9.37	< 0.1	45	52.6	582	2.87	2.3	38.3	1.5	1.5	0.6	20	< 0.05	3.35	11.8	0.95
E832262	< 0.005	6	20.9	1.86	1.68	5.84	1.02	4.89	< 0.1	47	48.1	457	1.95	3.9	28.7	1.3	1.2	0.5	40	< 0.05	1.55	8.1	0.86
E832263	0.013	< 1	18.1	2.34	0.80	6.59	1.48	2.25	< 0.1	44	52.0	298	1.67	3.9	25.5	1.2	1.2	0.4	50	< 0.05	1.27	7.8	0.79
E832264	< 0.005	< 1	14.3	2.34	0.55	6.23	1.22	2.09	< 0.1	44	40.1	273	1.47	0.3	23.1	1.2	1.0	0.4	50	< 0.05	1.06	6.1	0.78
E832265	0.005	< 1	16.9	2.36	0.61	6.51	1.46	2.10	< 0.1	44	56.5	299	1.61	1.5	23.4	1.2	1.2	0.4	40	< 0.05	1.23	6.5	0.80
E832266	< 0.005	< 1	29.4	2.27	1.00	7.29	1.61	1.73	< 0.1	51	55.5	312	2.33	1.6	40.6	1.4	1.5	0.5	50	< 0.05	2.57	9.7	0.94
E832267	0.005	5	2.7	0.13	0.43	0.94	0.20	4.63	0.3	26	15.6	129	0.55	0.1	83.2	0.5	0.3	0.2	70	< 0.05	1.01	1.3	0.24
E837051	0.016	< 1	24.4	2.06	0.91	6.97	1.31	1.94	0.1	37	79.2	533	4.50	2.5	33.0	1.3	1.3	0.4	70	< 0.05	1.53	10.9	0.80
E837052	< 0.005	< 1	22.7	2.27	0.49	7.09	1.60	1.56	< 0.1	32	46.6	271	2.19	2.7	27.4	1.0	1.3	0.3	50	< 0.05	1.14	8.9	0.64
E837053	< 0.005	< 1	29.4	1.95	0.53	7.02	1.67	1.55	< 0.1	53	82.0	287	2.78	3.0	31.9	0.8	1.3	0.3	20	< 0.05	1.34	10.8	0.65
E837054	0.035	16	43.2	1.82	0.74	4.23	1.10	1.30	< 0.1	122	91.5	422	4.71	5.3	32.9	0.6	1.0	0.2	50	< 0.05	2.48	11.6	0.29
E837055	< 0.005	13	12.9	2.38	0.40	7.52	1.34	1.75	< 0.1	49	93.4	283	2.13	4.4	18.5	0.9	1.3	0.3	50	< 0.05	0.76	5.9	0.65
E837056	< 0.005	8	14.4	2.29	0.43	6.98	1.16	1.76	< 0.1	48	55.6	263	2.07	0.2	22.2	0.8	1.3	0.3	60	< 0.05	0.82	7.0	0.61
E837057	< 0.005	< 1	14.1	2.13	0.48	6.91	1.13	1.76	< 0.1	64	65.2	355	2.80	0.2	22.0	1.1	1.2	0.4	50	< 0.05	0.80	7.0	0.70
E837058	< 0.005	< 1	63.0	1.11	0.53	> 10.0	1.07	0.89	0.2	87	68.1	343	4.97	3.8	44.2	0.9	1.8	0.3	70	0.16	2.71	16.8	0.52
E837059	< 0.005	< 1	15.7	2.34	0.56	7.01	1.27	2.10	< 0.1	70	72.7	386	3.21	0.6	23.5	1.1	1.2	0.4	30	< 0.05	0.85	7.4	0.68
E837060	< 0.005	< 1	14.9	2.66	0.17	8.13	3.18	1.27	< 0.1	22	11.4	218	1.44	0.5	1.4	1.1	1.1	0.5	< 10	< 0.05	1.25	10.0	0.89
E837061	< 0.005	< 1	18.3	2.13	0.94	7.10	1.17	2.24	< 0.1	53	125	533	3.91	2.9	30.8	1.4	1.2	0.5	50	0.08	1.27	9.5	0.83
E837062	0.010	< 1	14.2	2.34	1.10	6.68	1.19	2.82	0.1	101	143	698	4.39	7.0	36.2	1.6	1.3	0.6	10	< 0.05	0.85	10.8	1.01
E837063	0.037	< 1	22.2	1.97	1.13	7.31	1.13	2.54	< 0.1	109	180	774	5.55	8.3	41.1	2.1	1.5	0.7	30	< 0.05	1.44	12.9	1.02
E837064	< 0.005	< 1	51.7	1.88	0.98	7.74	1.17	1.75	< 0.1	77	93.6	884	5.55	5.5	34.0	1.0	1.2	0.4	20	< 0.05	3.58	12.3	0.64
E837065	< 0.005	11	39.9	1.63	0.56	4.58	0.90	1.33	< 0.1	124	137	523	5.93	7.8	41.4	0.8	1.1	0.3	90	0.11	2.18	14.5	0.30
E837066	< 0.005	18	15.9	2.33	0.48	7.19	1.36	1.58	< 0.1	48	55.2	274	1.97	4.4	24.0	0.9	1.4	0.3	40	< 0.05	1.11	8.1	0.63
E837067	< 0.005	12	21.3	2.19	0.50	6.71	1.28	1.54	< 0.1	52	46.6	270	2.12	3.8	21.6	0.8	1.2	0.3	40	< 0.05	1.29	7.3	0.56
E837068	< 0.005	< 1	14.2	2.36	0.42	6.82	1.26	1.80	< 0.1	54	47.5	283	2.19	0.2	17.3	0.9	1.2	0.3	60	< 0.05	0.87	5.3	0.64
E837069	< 0.005	< 1	14.1	2.57	0.44	6.80	1.34	1.90	< 0.1	56	54.8	289	2.27	0.6	17.6	1.0	1.2	0.3	50	< 0.05	0.83	6.2	0.64
E837070	3.18	< 1	6.1	1.50	1.27	5.79	1.52	3.11	< 0.1	34	50.6	530	3.24	0.9	27.8	1.5	1.0	0.5	40	0.93	17.8	14.8	0.70
E837071	< 0.005	< 1	18.6	2.37	0.42	6.98	1.59	1.77	< 0.1	54	68.4	283	2.27	0.9	20.7	0.9	1.2	0.3	30	< 0.05	0.97	6.4	0.65
E837072	< 0.005	< 1	15.6	2.45	0.48	6.82	1.50	1.77	< 0.1	52	51.1	300	2.25	2.8	21.2	0.8	1.1	0.3	10	< 0.05	0.90	6.5	0.58
E837073	< 0.005	< 1	22.9	2.38	0.56	7.22	1.41	1.76	< 0.1	36	43.5	398	2.41	2.8	29.8	1.0	1.5	0.3	60	< 0.05	1.36	10.9	0.69
E837074	< 0.005	5	19.2	2.20	0.48	6.87	0.76	1.70	< 0.1	61	58.6	311	3.06	3.3	23.1	0.9	1.3	0.3	50	< 0.05	1.15	8.4	0.54
E837075	< 0.005	< 1	20.1	2.16	0.65	6.50	0.75	1.74	< 0.1	61	67.3	310	3.41	2.2	22.6	0.8	1.2	0.3	50	< 0.05	1.33	7.7	0.54
E837076	< 0.005	< 1	14.2	2.28	0.43	6.69	0.71	1.70	< 0.1	53	35.7	264	2.47	2.7	22.1	0.7	1.1	0.2	30	< 0.05	0.97	7.1	0.50
E837077	< 0.005	< 1	33.1	1.87	0.96	7.26	0.67	1.94	< 0.1	94	103	589	6.26	6.0	40.8	1.6	1.3	0.5	40	< 0.05	1.71	17.6	0.85
E837078	< 0.005	< 1	13.0	2.25	0.69	6.11	0.62	1.94	< 0.1	33	81.9	343	3.16	1.7	23.4	0.9	1.0	0.3	30	< 0.05	0.88	7.3	0.58
E837079	< 0.005	< 1	12.2	2.37	0.46	6.53	0.64	1.88	< 0.1	54	40.2	333	2.68	2.2	20.2	0.9	1.2	0.3	50	< 0.05	0.83	7.1	0.56
E837080	< 0.005	< 1	15.0	2.45	0.19	7.30	1.70	1.23	< 0.1	25	10.0	220	1.75	0.2	1.9	1.2	1.0	0.5	20	0.12	1.35	9.4	0.80
E837091	< 0.005	< 1	15.9	2.24	0.81	7.29	0.65	2.21	< 0.1	76	64.1	440	3.57	1.8	27.4	1.3	1.3	0.4	50	< 0.05	1.03	9.0	0.76
E837092	< 0.005	13	16.0	1.77	0.74	3.32	0.64	2.11	0.1	115	195	638	5.62	8.9	35.2	1.1	1.2	0.3	70	< 0.05	1.03	11.9	0.43
E837093	< 0.005	12	16.1	2.06	1.05	6.99	0.59	2.52	< 0.1	106	130	644	4.95	6.0	36.8	1.6	1.3	0.5	60	< 0.05	1.11	11.6	0.87

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837094	< 0.005	6	12.8	2.19	0.43	6.30	0.64	1.75	< 0.1	43	45.6	259	2.03	1.0	22.9	1.0	1.2	0.3	50	< 0.05	0.88	7.9	0.67
E837095	< 0.005	< 1	14.5	2.21	0.45	6.39	0.60	1.66	< 0.1	47	38.2	280	2.13	0.5	22.5	0.9	1.3	0.3	50	< 0.05	1.00	7.7	0.62
E837096	< 0.005	< 1	15.0	2.16	0.43	6.21	0.62	1.75	< 0.1	55	50.7	309	2.55	1.1	19.5	0.9	1.1	0.3	50	< 0.05	0.98	6.8	0.54
E837097	< 0.005	< 1	13.8	2.19	0.61	6.44	0.61	1.80	< 0.1	61	64.7	447	2.80	4.5	21.6	0.9	1.2	0.3	30	< 0.05	1.16	8.2	0.56
E837098	< 0.005	< 1	12.1	2.46	0.59	6.61	0.75	1.93	< 0.1	47	47.8	328	2.31	2.7	23.1	0.9	1.2	0.3	< 10	< 0.05	0.87	7.9	0.61
E837099	< 0.005	< 1	23.2	2.11	0.62	7.11	0.86	1.44	< 0.1	52	52.9	277	2.72	4.7	31.4	0.8	1.3	0.3	< 10	< 0.05	1.47	10.9	0.53
E837100	< 0.005	< 1	15.7	2.43	0.23	6.97	1.29	1.29	< 0.1	33	9.5	265	2.16	5.2	2.9	1.5	1.0	0.7	< 10	< 0.05	1.18	7.2	0.84
E837111	< 0.005	< 1	19.1	2.13	0.45	6.34	0.74	1.62	< 0.1	50	57.2	304	3.18	3.4	18.3	0.9	1.0	0.3	< 10	< 0.05	1.56	6.9	0.48
E837112	< 0.005	< 1	31.7	1.77	0.84	8.49	0.61	1.67	0.1	91	92.6	513	5.22	6.2	31.5	1.3	1.4	0.4	30	< 0.05	2.06	12.0	0.70
E837113	< 0.005	12	29.7	1.92	0.67	4.38	0.70	1.54	0.1	99	119	477	4.95	7.9	33.8	0.9	1.2	0.3	60	< 0.05	1.58	13.4	0.41
E837114	< 0.005	16	26.4	2.22	0.48	6.80	0.75	1.63	< 0.1	63	52.7	339	3.27	4.7	17.2	0.9	1.1	0.3	70	< 0.05	2.12	6.9	0.47
E837115	< 0.005	11	48.5	1.93	1.11	7.86	0.67	1.79	0.1	99	73.3	468	6.05	4.5	43.4	1.3	1.2	0.4	90	< 0.05	2.89	17.3	0.64
E837116	< 0.005	< 1	29.6	2.02	0.86	7.61	0.74	1.82	0.1	75	55.7	414	4.23	3.1	33.3	1.1	1.3	0.4	90	0.09	1.84	12.1	0.70
E837117	< 0.005	< 1	42.7	1.94	0.99	7.32	0.78	1.74	< 0.1	82	91.4	502	5.67	3.2	45.2	1.2	1.2	0.4	70	< 0.05	2.74	15.0	0.65
E837118	< 0.005	3	12.4	2.22	0.39	6.09	0.83	1.65	< 0.1	45	49.1	333	2.14	2.8	18.2	0.9	1.2	0.3	40	< 0.05	1.03	6.2	0.58
E837119	0.005	< 1	21.4	1.99	0.45	6.48	0.85	1.57	0.1	66	64.0	389	3.17	3.8	25.0	1.0	1.3	0.3	10	< 0.05	1.23	9.1	0.61
E837120	< 0.005	< 1	14.7	2.22	0.19	7.00	2.25	1.17	< 0.1	28	11.8	236	1.85	12.4	2.1	1.6	0.8	0.7	< 10	< 0.05	1.23	4.1	0.99
E837121	< 0.005	< 1	44.2	1.82	0.97	7.21	0.78	1.74	< 0.1	78	70.2	728	5.32	4.4	36.1	1.2	1.1	0.4	50	< 0.05	2.24	13.7	0.61
E837122	0.010	< 1	18.0	2.19	0.67	6.40	0.87	1.89	< 0.1	73	80.7	354	3.53	2.0	24.8	1.0	1.2	0.3	10	< 0.05	1.14	8.7	0.62
E837123	< 0.005	9	17.0	2.18	0.41	3.62	0.80	1.78	< 0.1	67	80.5	329	2.99	4.4	22.8	0.7	1.1	0.2	50	< 0.05	0.81	7.6	0.33
E837124	0.022	12	18.2	2.05	0.47	7.10	0.82	1.72	0.1	61	55.9	641	2.91	2.6	21.8	0.9	1.2	0.3	50	< 0.05	1.13	8.2	0.54
E837125	< 0.005	5	16.8	2.26	0.44	6.52	0.72	1.75	0.1	54	65.2	324	2.56	2.4	22.0	0.8	1.2	0.3	40	< 0.05	1.07	7.8	0.52
E837126	0.015	< 1	39.2	1.88	0.91	8.35	0.62	1.48	< 0.1	78	47.5	375	4.45	3.2	33.0	0.9	1.4	0.3	110	< 0.05	2.81	12.7	0.60
E837127	< 0.005	< 1	30.0	1.89	0.74	7.46	0.64	1.68	< 0.1	76	97.7	399	4.71	0.7	31.9	1.0	1.2	0.3	70	< 0.05	2.31	9.4	0.58
E837128	< 0.005	< 1	51.1	1.93	0.94	8.02	0.95	1.54	< 0.1	67	66.0	483	5.34	3.5	35.9	1.1	1.4	0.3	60	< 0.05	3.69	15.5	0.54
E837129	0.006	< 1	21.3	2.09	0.51	6.99	0.82	1.62	< 0.1	53	77.2	311	3.27	2.9	26.9	1.0	1.2	0.3	40	< 0.05	1.19	9.6	0.50
E837130	3.28	8	6.4	1.48	1.14	5.26	1.76	2.94	< 0.1	31	59.9	552	3.43	0.6	27.5	1.6	1.0	0.6	20	1.05	20.4	16.2	0.72
E837131	0.005	< 1	19.6	2.18	0.49	7.11	0.80	1.63	< 0.1	62	48.2	317	3.14	3.8	23.4	0.8	1.2	0.2	< 10	< 0.05	1.39	8.6	0.54
E837132	0.005	< 1	21.0	2.16	0.72	7.01	0.89	1.81	< 0.1	81	79.8	399	4.25	4.4	22.9	1.1	1.1	0.3	30	< 0.05	1.35	7.7	0.67
E837133	0.010	2	54.2	2.11	1.18	7.74	0.77	1.83	0.1	70	57.4	510	5.47	2.5	37.0	1.4	1.3	0.4	80	< 0.05	3.41	14.7	0.77
E837134	0.005	2	37.3	1.96	0.92	7.22	0.64	1.70	0.2	73	145	736	6.50	4.1	35.9	1.2	1.2	0.4	80	< 0.05	2.81	13.3	0.64
E837135	< 0.005	< 1	30.0	2.10	0.80	6.52	0.73	1.88	< 0.1	61	94.7	670	5.01	3.1	27.7	1.1	1.1	0.4	50	< 0.05	1.52	12.7	0.65
E837136	0.006	< 1	24.0	2.07	0.63	6.96	0.68	1.63	< 0.1	75	79.0	405	4.01	1.1	23.7	0.9	1.3	0.3	70	< 0.05	1.47	9.6	0.54
E837137	0.008	< 1	22.0	2.19	0.76	7.37	0.80	1.83	< 0.1	77	67.9	377	3.80	1.6	25.3	1.1	1.4	0.3	70	< 0.05	1.53	8.7	0.60
E837138	0.005	< 1	12.4	2.36	0.41	6.53	0.56	1.76	< 0.1	48	49.4	263	2.22	0.4	18.8	0.7	1.1	0.2	40	< 0.05	0.78	6.4	0.54
E837139	0.005	< 1	13.0	2.25	0.54	6.53	0.63	1.89	< 0.1	66	62.5	372	3.08	0.5	24.6	1.1	1.2	0.3	40	< 0.05	0.77	8.1	0.68
E837140	0.005	7	14.8	2.44	0.18	6.86	1.57	1.16	< 0.1	23	18.8	216	1.62	1.3	2.4	1.2	0.9	0.5	< 10	< 0.05	1.35	6.4	0.82
E837141	0.011	12	14.3	2.14	0.37	3.61	0.93	1.45	< 0.1	60	179	324	2.92	4.4	25.5	0.8	1.1	0.2	40	< 0.05	0.81	8.4	0.35
E837142	0.006	11	60.0	1.83	1.04	6.93	0.62	1.61	< 0.1	97	167	446	6.19	5.8	31.2	1.0	1.0	0.3	80	< 0.05	3.01	12.1	0.51
E837143	0.006	5	30.5	1.91	0.78	6.71	0.90	1.55	< 0.1	62	104	396	4.47	3.6	30.7	0.9	1.2	0.3	90	< 0.05	2.03	10.9	0.54
E837144	0.006	< 1	18.6	2.14	0.47	7.24	0.59	1.62	< 0.1	57	56.3	267	2.81	0.3	23.5	0.8	1.2	0.3	220	< 0.05	1.25	8.4	0.52
E837145	0.005	< 1	36.5	> 3.00	1.17	> 10.0	1.61	3.07	0.2	123	102	660	6.15	1.3	48.2	1.9	2.6	0.6	160	< 0.05	2.69	16.6	1.10
E837146	< 0.005	1	19.9	2.13	0.47	6.31	1.01	1.61	< 0.1	55	50.5	270	2.86	4.5	24.1	1.0	1.2	0.3	30	< 0.05	1.13	8.1	0.61

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837147	0.006	< 1	26.7	2.02	0.53	6.88	0.88	1.56	< 0.1	78	73.9	359	3.72	2.6	25.0	1.1	1.3	0.3	30	< 0.05	1.50	9.0	0.60
E837148	0.005	3	21.2	1.98	0.49	6.93	1.00	1.51	0.1	71	67.6	314	3.64	3.0	23.4	0.8	1.2	0.3	10	< 0.05	1.55	8.5	0.51
E837149	0.006	< 1	41.3	1.84	0.91	7.84	0.77	1.51	< 0.1	81	84.8	416	5.39	5.6	35.8	1.0	1.2	0.3	30	< 0.05	2.56	13.3	0.55
E837150	3.25	4	6.1	1.52	1.32	5.56	1.18	2.99	< 0.1	39	55.7	527	3.53	0.9	27.5	1.4	1.0	0.5	10	1.05	18.7	15.1	0.62
E837151	0.013	10	16.4	2.17	0.42	3.53	0.97	1.70	< 0.1	69	84.6	390	3.43	6.0	25.9	0.7	1.2	0.2	50	< 0.05	0.80	9.1	0.33
E837152	0.005	12	14.6	2.20	0.46	6.30	0.76	1.70	< 0.1	56	57.9	288	2.65	3.6	21.4	0.7	1.2	0.3	60	< 0.05	1.09	7.2	0.51
E837153	0.005	8	27.6	1.98	0.79	7.08	0.69	1.66	< 0.1	76	72.4	387	4.11	5.7	31.9	0.9	1.3	0.3	50	< 0.05	1.68	11.9	0.57
E837154	< 0.005	< 1	16.7	2.20	0.47	6.57	0.76	1.72	< 0.1	60	63.5	441	2.97	4.3	23.1	0.8	1.0	0.3	40	< 0.05	1.13	7.8	0.55
E837155	< 0.005	< 1	16.8	2.21	0.37	6.34	0.73	1.47	< 0.1	54	59.5	231	2.57	3.0	17.1	0.8	1.3	0.2	50	< 0.05	1.15	5.6	0.50
E837156	0.005	< 1	32.4	1.89	0.79	7.27	0.71	1.56	< 0.1	64	81.9	379	4.83	1.8	30.3	1.4	1.2	0.4	60	< 0.05	1.97	10.1	0.54
E837157	0.006	< 1	26.0	1.97	0.71	6.23	0.86	1.44	< 0.1	96	61.2	339	5.02	1.7	21.1	0.8	1.1	0.2	50	< 0.05	2.49	7.3	0.45
E837158	< 0.005	< 1	37.0	2.70	1.11	8.04	0.84	2.17	0.1	71	67.6	441	4.08	3.3	37.7	0.8	1.2	0.3	10	< 0.05	2.22	12.7	0.52
E837159	< 0.005	< 1	28.3	2.57	0.74	7.20	1.18	1.83	< 0.1	88	74.4	362	4.17	3.2	22.7	0.8	1.1	0.2	< 10	0.10	2.85	7.8	0.47
E837160	< 0.005	< 1	18.2	2.63	0.25	7.20	1.25	1.15	< 0.1	22	12.9	223	1.96	6.6	3.0	0.7	1.0	0.3	< 10	< 0.05	1.40	3.7	0.64
E837161	< 0.005	< 1	33.5	1.92	0.88	7.79	1.01	1.67	< 0.1	84	135	470	6.07	5.3	34.5	1.1	1.1	0.4	< 10	< 0.05	3.08	10.8	0.57
E837162	0.017	8	57.7	1.82	0.83	3.76	0.71	1.34	0.1	112	97.8	377	5.76	5.3	35.3	0.4	1.1	0.1	60	< 0.05	1.92	13.2	0.18
E837163	0.006	10	22.3	2.06	0.88	6.71	0.81	2.02	0.1	84	91.1	507	4.32	5.4	29.7	1.1	1.1	0.4	50	< 0.05	1.63	10.5	0.64
E837164	0.011	8	23.4	2.16	0.92	6.86	0.72	2.15	0.2	94	109	522	4.81	5.2	31.7	1.1	1.2	0.4	50	< 0.05	1.66	10.7	0.77
E837165	0.008	< 1	12.6	2.05	1.01	5.99	0.79	2.66	0.1	87	128	622	4.12	7.1	30.6	1.6	1.0	0.6	50	< 0.05	0.67	9.6	0.91
E837166	< 0.005	< 1	11.2	2.31	0.70	5.71	0.68	2.17	< 0.1	49	105	349	2.13	4.3	18.2	1.0	1.0	0.4	40	< 0.05	0.49	6.0	0.66
E837167	0.024	< 1	14.2	2.34	0.46	5.99	0.71	1.97	< 0.1	39	53.8	258	1.72	0.6	17.9	0.9	1.0	0.3	30	< 0.05	0.66	5.3	0.61
E837168	< 0.005	< 1	10.7	2.45	0.39	6.01	0.66	1.86	< 0.1	34	56.6	225	1.37	0.6	14.9	0.8	1.0	0.3	30	< 0.05	0.52	4.4	0.59
E837169	0.015	< 1	17.7	2.40	0.59	6.43	0.96	1.90	< 0.1	47	44.6	265	2.10	3.8	21.3	0.9	1.2	0.3	30	< 0.05	1.05	6.5	0.64
E837170	3.26	< 1	5.7	1.39	1.23	4.92	1.14	2.83	< 0.1	40	69.2	503	3.33	1.0	25.7	1.2	1.0	0.4	< 10	0.97	17.8	14.1	0.58
E837171	0.005	3	11.6	2.29	0.48	6.20	0.69	1.89	< 0.1	47	55.5	290	1.93	6.6	17.9	1.0	1.0	0.3	40	< 0.05	0.97	5.8	0.61
E837172	< 0.005	< 1	37.4	1.66	1.10	7.45	0.68	1.49	< 0.1	51	51.0	445	3.29	2.8	35.9	1.0	1.5	0.4	40	< 0.05	3.28	11.3	0.61
E837173	< 0.005	< 1	18.3	2.11	0.55	6.25	0.91	1.68	< 0.1	37	41.1	255	1.87	3.3	19.6	0.9	1.1	0.3	40	< 0.05	1.36	6.2	0.56
E837174	< 0.005	< 1	32.5	2.02	0.76	6.47	0.74	1.81	< 0.1	30	46.8	359	2.28	0.8	25.1	1.0	1.2	0.3	30	< 0.05	2.13	8.8	0.60
E837175	0.005	< 1	9.5	2.42	0.47	6.24	0.73	2.09	< 0.1	43	43.7	281	1.77	3.9	18.8	1.0	1.1	0.3	20	< 0.05	0.65	5.9	0.66
E837176	0.006	< 1	15.4	2.51	0.63	6.47	0.88	2.22	< 0.1	47	49.1	309	1.96	4.7	21.6	1.0	1.1	0.4	30	< 0.05	0.79	6.3	0.74
E837177	< 0.005	< 1	13.4	2.48	0.47	6.29	0.71	2.11	< 0.1	39	50.7	279	1.67	4.0	18.1	1.0	1.1	0.3	40	< 0.05	0.76	5.6	0.60
E837178	0.009	2	27.2	1.99	1.01	6.91	0.73	2.37	< 0.1	132	140	647	6.31	5.0	29.4	1.5	1.3	0.6	30	< 0.05	1.27	11.5	0.88
E837179	0.027	14	50.3	2.22	0.81	4.45	0.79	1.46	< 0.1	83	62.8	510	4.85	3.1	40.0	0.6	1.5	0.2	50	< 0.05	1.94	15.2	0.24
E837180	< 0.005	7	15.7	2.38	0.19	6.97	1.20	1.18	< 0.1	26	7.5	241	1.70	9.0	2.3	1.2	0.9	0.5	< 10	< 0.05	1.29	9.5	0.87
E837181	< 0.005	13	16.2	2.20	0.40	6.70	0.95	1.57	< 0.1	49	50.0	232	2.38	4.4	19.7	0.7	1.1	0.3	40	< 0.05	0.95	6.2	0.48
E837182	0.012	2	40.4	1.77	0.96	8.18	0.68	1.67	< 0.1	105	107	550	7.11	3.0	38.2	1.0	1.4	0.4	120	< 0.05	2.69	14.2	0.63
E837183	0.011	< 1	27.4	1.94	0.73	7.45	0.59	1.63	< 0.1	86	81.6	428	5.17	2.7	32.1	0.9	1.3	0.3	70	< 0.05	1.57	11.8	0.53
E837184	0.009	< 1	48.0	1.82	0.96	7.52	0.58	1.46	0.1	72	65.5	488	5.56	4.5	38.0	0.8	1.3	0.3	40	< 0.05	3.05	13.1	0.47
E837185	< 0.005	< 1	15.1	2.20	0.48	6.54	0.62	1.78	< 0.1	58	50.7	314	3.06	3.8	20.4	0.7	1.1	0.2	30	< 0.05	1.00	6.7	0.50
E837186	0.005	< 1	7.3	2.31	0.49	5.65	1.05	2.17	< 0.1	41	50.0	350	1.68	4.9	17.6	1.1	1.0	0.4	10	< 0.05	0.49	5.7	0.69
E837187	0.006	< 1	17.7	2.11	0.39	6.42	1.22	1.50	< 0.1	53	54.2	229	2.50	3.5	21.2	0.7	1.1	0.2	< 10	< 0.05	1.12	6.0	0.45
E837188	< 0.005	< 1	36.8	2.09	0.94	7.80	1.18	1.80	< 0.1	80	72.2	471	4.41	5.8	33.9	1.0	1.4	0.3	< 10	< 0.05	2.47	12.8	0.59
E837189	0.008	2	42.3	1.84	0.92	8.16	0.89	1.79	< 0.1	105	143	564	6.39	4.1	36.2	1.2	1.4	0.5	< 10	< 0.05	2.91	13.0	0.68

Results

Activation Laboratories Ltd.

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837190	3.08	8	5.8	1.45	1.12	3.51	1.26	2.92	< 0.1	98	103	528	3.39	1.4	26.8	0.9	0.9	0.3	30	0.99	16.0	14.5	0.38
E837101	< 0.005	13	21.1	2.03	0.37	3.04	0.80	1.48	< 0.1	64	89.1	302	2.96	5.0	25.1	0.5	1.1	0.2	50	< 0.05	1.14	8.6	0.29
E837102	< 0.005	< 1	19.8	2.06	0.46	6.52	0.94	1.60	< 0.1	58	57.2	307	2.85	4.3	23.2	0.8	1.2	0.3	20	< 0.05	1.55	8.3	0.54
E837103	< 0.005	< 1	54.7	1.71	1.28	8.04	0.77	1.94	0.2	92	96.2	583	5.41	4.5	56.4	1.3	1.4	0.5	50	0.58	2.90	23.1	0.73
E837104	< 0.005	< 1	19.1	2.30	0.68	6.45	1.00	1.87	< 0.1	72	82.5	363	3.91	3.2	26.8	1.0	1.2	0.3	30	< 0.05	1.33	8.1	0.56
E837105	< 0.005	< 1	16.0	2.32	0.50	6.37	0.91	1.77	< 0.1	49	62.2	290	2.65	2.7	18.6	0.8	1.0	0.3	20	< 0.05	1.21	6.9	0.54
E837106	< 0.005	< 1	48.3	1.66	0.98	7.00	0.94	1.47	0.1	107	84.4	511	6.44	3.2	30.8	0.9	1.3	0.3	30	< 0.05	3.10	12.9	0.52
E837107	< 0.005	< 1	59.5	1.83	1.15	7.34	0.81	1.62	< 0.1	66	75.4	552	6.90	2.8	39.9	1.0	1.3	0.3	20	< 0.05	3.43	16.3	0.53
E837108	< 0.005	< 1	18.6	2.22	0.42	6.81	0.73	1.63	< 0.1	65	59.4	277	2.91	0.9	17.7	0.8	1.2	0.3	60	< 0.05	1.33	6.5	0.53
E837109	< 0.005	< 1	22.4	2.14	0.48	6.43	1.09	1.64	< 0.1	64	55.5	299	3.13	4.0	26.3	0.9	1.2	0.3	40	< 0.05	1.28	8.6	0.51
E837110	3.14	7	6.0	1.43	1.26	5.33	0.89	2.98	< 0.1	77	78.8	520	3.47	1.2	27.2	1.3	0.9	0.5	40	0.96	18.0	14.7	0.65
EA32241	0.051	8	29.8	1.11	1.01	4.89	0.67	2.72	0.2	54	77.3	338	1.91	2.9	46.0	1.2	0.9	0.4	90	< 0.05	3.09	10.6	0.91
GXR-1 Meas		< 1	7.3	0.04	0.22	2.13	0.04	0.96	3.1	77	11.9	991	23.7	< 0.1	38.5		0.9		2900	30.1	3.07	7.6	0.59
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
GXR-1 Meas		< 1	6.1	0.03	0.18	1.92	0.04	0.92	2.3	79	13.9	872	22.7	0.3	40.6		0.8		2370	26.3	2.80	7.2	0.58
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
GXR-1 Meas		10	6.9	0.03	0.20	1.93	0.04	1.00	2.4	88	10.5	923	24.6	0.5	43.4		0.8		3890	27.8	2.74	7.7	0.58
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		< 1	10.9	0.54	1.43	6.44	3.81	0.99	0.3	83	43.0	151	3.15	1.3	39.2		2.1		80	3.17	2.76	13.6	1.41
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
GXR-4 Meas		< 1	11.9	0.53	1.72	7.00	4.09	0.99	0.1	85	34.0	149	2.82	1.3	39.8		2.1		40	2.73	2.38	12.9	1.48
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
GXR-4 Meas		9	11.2	0.53	1.74	6.81	2.69	1.04	0.1	90	64.5	164	2.96	1.3	40.6		1.9		50	2.86	2.45	13.5	1.42
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		9	34.6	1.58	0.82	7.95	2.07	1.03		47	49.1	915	4.70	1.1	33.6	3.5	2.7	1.3	60		4.05	17.5	1.49
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
SDC-1 Meas		12	34.2	1.53	0.97	8.36	1.53	1.01		54	47.9	836	4.41	1.2	34.4	3.4	2.8	1.2	60		3.58	15.8	1.47
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
SDC-1 Meas		12	34.4	1.57	0.98	7.52	1.85	0.95		68	50.0	833	4.45	1.5	35.6	3.3	2.7	1.1	80		3.58	16.9	1.32
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		< 1	33.8	0.10	0.67	> 10.0	1.86	0.15	< 0.1	108	46.5	1040	5.45	1.9	24.1		1.1		110	0.23	4.43	13.6	0.60
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
GXR-6 Meas		< 1	33.8	0.08	0.57	> 10.0	1.23	0.16	< 0.1	130	52.7	1040	5.46	2.2	25.8		1.1		70	0.18	4.02	12.8	0.66
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
GXR-6 Meas		9	33.6	0.08	0.54	> 10.0	1.63	0.15	0.1	186	72.2	1070	5.48	3.0	25.6		1.1		100	0.15	3.99	13.1	0.57
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.4							135	260				259							52.5	0.57

Results

Activation Laboratories Ltd.

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
DNC-1a Cert			5.2							148	270				247							57	0.59
DNC-1a Meas			4.0							137	194				267							50.4	0.58
DNC-1a Cert			5.2							148	270				247							57	0.59
DNC-1a Meas			4.4							149	209				286							55.1	0.60
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas			161						0.5	211	79.0			3.0	84.7	3.7	3.5	1.4			8.36	21.6	1.85
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
SBC-1 Meas			158						0.3	215	77.6			3.4	88.3	3.5	3.0	1.2			7.80	20.8	1.91
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
SBC-1 Meas			160						0.3	219	82.1			3.2	90.3	3.7	2.9	1.3			7.85	21.9	1.86
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			21.0	0.09	0.27	7.56	0.40	0.21		122	593	509	13.8	2.5	244	1.4	0.7	0.5			4.11	28.9	0.61
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			19.8	0.09	0.24	7.39	0.38	0.18		107	552	501	13.2	2.1	232	1.5	0.8	0.6			3.77	27.5	0.57
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			21.1	0.09	0.23	7.57	0.43	0.19		87	421	460	14.3	1.4	223	1.4	0.8	0.4			3.54	26.9	0.52
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			19.7	0.08	0.21	7.57	0.42	0.18		112	438	472	13.1	1.9	237	1.4	0.7	0.5			3.50	26.5	0.57
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
OREAS 45d (4-Acid) Meas			19.6	0.08	0.21	5.96	0.41	0.17		167	480	446	13.2	3.8	240	1.2	0.6	0.4			2.93	27.1	0.52
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			19.0						6.0	25	41.5			0.4	53.1	3.0	6.9	1.1	1310		1.89	14.4	1.31
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			19.2						6.2	24	43.7			2.7	50.1	3.2	6.7	1.1	1140		1.79	13.3	1.31
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			17.5						5.1	25	39.5			2.9	52.1	2.8	6.6	0.9	1180		1.76	13.1	1.26
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			19.0						4.8	26	38.3			1.7	52.9	2.8	6.6	1.0	1210		1.65	12.8	1.37
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS		
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
SdAR-M2 (U.S.G.S.) Meas			18.2						4.8	25	45.2				3.9	51.3	2.5	6.7	0.9	1340		1.66	12.9	1.10
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	
OREAS 223 (Fire Assay) Meas	1.76																							
OREAS 223 (Fire Assay) Cert	1.78																							
OREAS 223 (Fire Assay) Meas	1.80																							
OREAS 223 (Fire Assay) Cert	1.78																							
OREAS 223 (Fire Assay) Meas	1.81																							
OREAS 223 (Fire Assay) Cert	1.78																							
OREAS 223 (Fire Assay) Meas	1.73																							
OREAS 223 (Fire Assay) Cert	1.78																							
OREAS 218 Meas	0.545																							
OREAS 218 Cert	0.531																							
OREAS 218 Meas	0.540																							
OREAS 218 Cert	0.531																							
OREAS 220 (Fire Assay) Meas	0.868																							
OREAS 220 (Fire Assay) Cert	0.828																							
OREAS 220 (Fire Assay) Meas	0.857																							
OREAS 220 (Fire Assay) Cert	0.828																							
OREAS 220 (Fire Assay) Meas	0.872																							
OREAS 220 (Fire Assay) Cert	0.828																							
OREAS 220 (Fire Assay) Meas	0.876																							
OREAS 220 (Fire Assay) Cert	0.828																							
OREAS 220 (Fire Assay) Meas	0.874																							
OREAS 220 (Fire Assay) Cert	0.828																							
OREAS 220 (Fire Assay) Meas	0.883																							
OREAS 220 (Fire Assay) Cert	0.828																							



	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
OREAS 220 (Fire Assay) Meas	1.23																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.849																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.858																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.873																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.884																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.879																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 222(FIRE ASSAY) Meas	1.27																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.23																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.24																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.24																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.19																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.26																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	0.874																						

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.23																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.21																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.21																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.23																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.25																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.24																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
E835451 Orig		1	12.1	2.34	0.82	6.29	1.56	2.24	< 0.1	45	46.0	368	1.66	0.1	26.4	1.2	1.0	0.4	50	< 0.05	0.74	7.1	0.77
E835451 Dup		< 1	12.2	2.38	0.81	6.47	1.59	2.22	< 0.1	44	52.6	360	1.65	4.0	29.0	1.1	1.1	0.4	40	< 0.05	0.74	7.1	0.79
E835460 Orig	< 0.005																						
E835460 Dup	< 0.005																						
E835471 Orig	< 0.005																						
E835471 Dup	< 0.005																						
E835480 Orig	< 0.005																						
E835480 Dup	< 0.005																						
E835489 Orig		< 1	27.9	1.77	0.83	7.24	2.36	1.28	< 0.1	59	51.2	346	2.60	3.6	31.1	1.1	1.3	0.3	20	< 0.05	2.30	9.2	0.65
E835489 Dup		< 1	28.6	1.78	0.85	7.19	2.43	1.28	< 0.1	53	54.6	347	2.63	3.4	31.3	1.0	1.2	0.3	20	< 0.05	2.30	9.3	0.67
E835491 Orig		< 1	15.9	1.94	0.58	5.78	1.77	1.53	< 0.1	74	70.6	353	3.60	1.1	20.1	0.9	1.0	0.3	50	< 0.05	1.38	6.5	0.64
E835491 Dup		< 1	15.9	1.94	0.62	5.73	1.75	1.58	< 0.1	40	72.0	349	3.33	4.4	20.1	1.0	1.0	0.3	40	< 0.05	1.40	6.3	0.59
E835495 Orig	< 0.005																						
E835495 Dup	< 0.005																						
E835205 Orig	< 0.005																						
E835205 Dup	< 0.005																						
E835215 Orig	0.035																						
E835215 Dup	0.034																						
E835227 Orig		< 1	19.8	1.91	1.05	6.93	1.19	2.43	< 0.1	71	141	692	4.67	3.8	43.4	1.8	1.4	0.6	50	< 0.05	1.04	13.6	1.08

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835227 Dup		< 1	19.5	1.92	1.11	7.14	1.20	2.50	0.1	65	128	719	4.96	3.9	44.5	1.9	1.3	0.6	60	< 0.05	1.03	13.9	1.06
E835232 Orig	< 0.005	< 1	24.3	2.32	1.40	6.69	1.34	3.02	< 0.1	30	92.1	637	3.54	3.1	35.8	1.6	1.0	0.6	40	< 0.05	2.64	12.4	1.00
E835232 Dup	< 0.005	< 1	24.0	2.38	1.34	6.86	1.38	2.95	< 0.1	36	78.6	655	3.44	4.4	34.5	1.8	1.1	0.6	30	< 0.05	2.60	12.0	1.13
E835240 Orig	0.006																						
E835240 Dup	< 0.005																						
E835263 Orig		< 1	23.4	2.19	1.17	6.55	1.89	2.24	< 0.1	63	97.3	488	2.69	4.2	53.2	1.2	1.1	0.4	60	< 0.05	1.85	11.7	0.73
E835263 Dup		< 1	23.3	2.19	1.18	6.46	1.83	2.27	< 0.1	61	85.9	512	2.76	4.3	53.7	1.1	1.1	0.4	40	< 0.05	1.83	11.4	0.77
E835271 Orig	< 0.005																						
E835271 Dup	< 0.005																						
E835272 Orig	< 0.005																						
E835272 Dup	< 0.005																						
E835273 Orig		< 1	56.1	1.94	1.38	7.65	1.13	2.25	0.2	69	111	624	4.24	2.9	80.7	1.5	1.3	0.5	70	< 0.05	3.39	24.6	0.83
E835273 Dup		< 1	57.0	1.97	1.34	8.21	1.18	2.16	0.1	65	110	613	4.06	2.9	81.4	1.5	1.4	0.5	80	< 0.05	3.50	24.2	0.81
E835275 Orig	< 0.005	14	36.5	2.62	1.24	5.16	1.55	1.96	< 0.1	76	149	438	3.18	3.4	49.9	0.6	1.1	0.2	70	< 0.05	2.36	11.7	0.29
E835275 Dup	< 0.005	13	36.2	2.62	1.30	7.23	1.73	2.22	0.1	74	129	440	3.20	3.2	48.4	0.9	1.3	0.3	70	< 0.05	2.57	11.4	0.55
E835285 Orig	< 0.005																						
E835285 Dup	< 0.005																						
E835300 Orig	< 0.005																						
E835300 Dup	< 0.005																						
E835302 Orig		9	24.0	2.02	1.18	4.77	1.37	2.65	0.2	91	164	946	4.28	5.3	60.3	1.2	1.1	0.4	70	< 0.05	2.28	16.1	0.55
E835302 Dup		10	24.1	2.12	1.17	4.61	1.37	2.62	0.1	93	200	940	4.38	6.2	62.5	1.3	1.2	0.4	< 10	< 0.05	2.28	15.7	0.53
E835311 Orig	0.005																						
E835311 Dup	< 0.005																						
E835320 Orig	< 0.005																						
E835320 Dup	< 0.005																						
E835327 Orig		17	39.3	1.76	1.19	5.99	1.07	1.88	0.3	83	184	463	4.01	3.7	55.2	1.0	1.1	0.4	90	< 0.05	3.10	12.2	0.51
E835327 Dup		19	39.3	1.75	1.20	6.47	1.06	1.87	0.3	81	190	473	4.09	3.7	55.2	1.0	1.0	0.3	90	0.05	3.19	11.7	0.54
E835335 Orig	0.006																						
E835335 Dup	< 0.005																						
E835345 Orig	< 0.005	18	27.7	2.33	1.07	6.51	1.64	1.99	< 0.1	59	94.5	365	2.48	3.5	48.0	0.8	1.0	0.3	50	< 0.05	2.10	10.0	0.51
E835345 Dup	0.005	16	28.6	2.39	1.08	6.65	1.59	1.98	< 0.1	58	87.9	368	2.48	4.0	48.7	0.8	1.2	0.3	50	< 0.05	2.15	10.1	0.53
E832160 Orig	< 0.005																						
E832160 Dup	< 0.005																						
E832163 Orig	< 0.005																						
E832163 Dup	< 0.005																						
E832170 Orig		11	5.8	1.42	1.03	3.11	2.40	2.76	< 0.1	98	72.0	518	3.04	1.4	26.7	0.8	1.0	0.3	50	0.89	15.4	14.2	0.35
E832170 Dup		9	6.2	1.53	1.32	5.35	2.65	2.99	< 0.1	79	89.9	533	3.15	1.4	28.7	1.5	0.9	0.5	50	0.93	18.2	14.6	0.71
E832175 Orig	0.006																						
E832175 Dup	0.015																						
E832185 Orig	< 0.005																						
E832185 Dup	< 0.005																						
E832195 Orig	< 0.005																						
E832195 Dup	< 0.005																						

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832197 Orig		< 1	9.5	> 3.00	0.96	7.22	0.79	3.03	< 0.1	22	57.7	591	1.59	2.6	32.2	0.8	1.0	0.2	20	< 0.05	2.35	7.0	0.29
E832197 Dup		< 1	9.8	2.94	0.97	7.21	0.86	3.05	< 0.1	11	49.1	605	1.65	2.4	32.7	0.8	0.9	0.3	20	< 0.05	2.39	7.2	0.31
E832244 Orig		19	1.0	0.03	0.16	0.89	0.07	5.11	0.3	11	12.7	95	0.21	< 0.1	40.2	1.2	0.3	0.4	170	0.12	0.47	4.3	0.74
E832244 Dup		12	1.0	0.03	0.15	0.81	0.07	5.07	0.3	11	14.9	94	0.20	0.1	39.0	1.3	0.3	0.5	120	0.11	0.49	4.1	0.74
E832254 Orig	0.007																						
E832254 Dup	< 0.005																						
E832264 Orig	< 0.005																						
E832264 Dup	< 0.005																						
E837057 Orig	< 0.005																						
E837057 Dup	< 0.005																						
E837067 Orig		12	21.3	2.19	0.50	6.71	1.28	1.54	< 0.1	52	46.6	270	2.12	3.8	21.6	0.8	1.2	0.3	40	< 0.05	1.29	7.3	0.56
E837067 Dup		< 1	19.7	2.16	0.50	6.85	1.28	1.46	< 0.1	50	41.2	269	2.05	0.2	21.4	0.9	1.2	0.3	50	< 0.05	1.23	7.3	0.62
E837072 Orig	< 0.005																						
E837072 Dup	< 0.005																						
E837073 Orig		< 1	22.9	2.38	0.56	7.22	1.41	1.76	< 0.1	36	43.5	398	2.41	2.8	29.8	1.0	1.5	0.3	60	< 0.05	1.36	10.9	0.69
E837073 Dup		< 1	23.0	2.23	0.57	7.37	1.50	1.76	< 0.1	45	40.1	399	2.62	3.2	30.0	0.9	1.3	0.3	50	< 0.05	1.38	10.7	0.65
E837074 Orig		5	19.2	2.20	0.48	6.87	0.76	1.70	< 0.1	61	58.6	311	3.06	3.3	23.1	0.9	1.3	0.3	50	< 0.05	1.15	8.4	0.54
E837074 Dup		< 1	19.2	2.15	0.48	7.08	0.82	1.73	< 0.1	65	54.7	316	3.26	2.9	24.4	0.9	1.2	0.3	30	< 0.05	1.17	8.5	0.54
E837092 Orig	< 0.005																						
E837092 Dup	< 0.005																						
E837112 Orig	< 0.005																						
E837112 Dup	< 0.005																						
E837130 Orig		8	6.4	1.48	1.14	5.26	1.76	2.94	< 0.1	31	59.9	552	3.43	0.6	27.5	1.6	1.0	0.6	20	1.05	20.4	16.2	0.72
E837130 Dup		9	6.0	1.44	1.06	4.42	1.47	2.94	< 0.1	89	84.7	550	3.38	1.5	27.9	1.3	0.8	0.5	30	1.00	19.6	15.7	0.57
E837132 Orig		< 1	21.0	2.16	0.72	7.01	0.89	1.81	< 0.1	81	79.8	399	4.25	4.4	22.9	1.1	1.1	0.3	30	< 0.05	1.35	7.7	0.67
E837132 Dup		< 1	20.9	2.13	0.72	7.03	0.66	1.79	< 0.1	81	68.7	372	4.10	2.2	23.7	1.0	1.3	0.3	70	< 0.05	1.32	7.9	0.62
E837134 Orig		2	37.3	1.96	0.92	7.22	0.64	1.70	0.2	73	145	736	6.50	4.1	35.9	1.2	1.2	0.4	80	< 0.05	2.81	13.3	0.64
E837134 Dup		< 1	36.5	1.94	0.91	7.04	0.78	1.73	0.1	108	114	704	6.91	3.5	34.1	1.1	1.2	0.3	70	< 0.05	2.69	13.7	0.62
E837137 Orig	0.008																						
E837137 Dup	0.011																						
E837147 Orig	0.006																						
E837147 Dup	< 0.005																						
E837162 Orig	0.017																						
E837162 Dup	0.021																						
E837170 Orig		< 1	5.7	1.39	1.23	4.92	1.14	2.83	< 0.1	40	69.2	503	3.33	1.0	25.7	1.2	1.0	0.4	< 10	0.97	17.8	14.1	0.58
E837170 Dup		< 1	6.0	1.48	1.26	5.36	1.17	2.91	< 0.1	35	56.4	516	3.47	0.9	27.1	1.3	0.9	0.5	30	1.00	18.5	14.3	0.63
E837172 Orig	< 0.005																						
E837172 Dup	0.007																						
E837175 Orig		< 1	9.5	2.42	0.47	6.24	0.73	2.09	< 0.1	43	43.7	281	1.77	3.9	18.8	1.0	1.1	0.3	20	< 0.05	0.65	5.9	0.66
E837175 Dup		< 1	9.5	2.46	0.47	6.26	0.75	2.07	< 0.1	42	42.5	275	1.75	2.1	18.2	1.0	1.1	0.3	30	< 0.05	0.69	5.5	0.65
E837182 Orig	0.012																						
E837182 Dup	0.011																						
E837108 Orig	< 0.005																						

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837108 Dup	< 0.005																						
Method Blank		11	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		11	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	11.9	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		6	< 0.5	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.1	2	16.1	13	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		8	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	8.5	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		8	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	4.7	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		9	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.6	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		10	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	2.1	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	90	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	1	9.8	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.1	1	4.7	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	1	4.6	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
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Method Blank	< 0.005																						
Method Blank	0.007																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank		10	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	2.1	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		10	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.0	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		11	< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	2.0	12	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		21	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.0	14	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		10	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	1.7	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
Method Blank	< 0.005																						
Method Blank		10	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	1.5	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835451	0.07	< 0.1	34.6	8.9	0.3	41.9	12.3	11	0.7	0.29	< 0.1	< 1	< 0.1	< 0.1	498	16.2	34.7	4.2	16.5	3.2	2.6	0.3	2.0
E835452	0.17	< 0.1	40.9	11.1	4.5	45.5	12.0	114	0.8	0.12	< 0.1	< 1	< 0.1	< 0.1	465	27.5	50.5	6.0	22.3	3.3	3.0	0.4	2.2
E835453	0.09	< 0.1	27.7	9.3	< 0.1	44.2	8.5	174	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	526	12.2	24.8	2.8	10.9	1.7	1.7	0.2	1.4
E835454	0.10	< 0.1	38.5	9.3	< 0.1	51.5	8.8	63	0.1	0.28	< 0.1	< 1	< 0.1	< 0.1	563	11.3	21.7	2.7	10.7	2.0	1.7	0.2	1.5
E835455	0.40	< 0.1	56.1	15.6	2.8	59.9	11.1	89	1.3	0.76	< 0.1	1	< 0.1	< 0.1	440	16.7	34.4	3.7	14.0	2.2	2.3	0.3	1.9
E835456	0.15	< 0.1	50.5	11.7	32.4	56.6	11.3	170	1.1	0.30	< 0.1	1	< 0.1	< 0.1	528	18.0	45.5	4.5	16.7	2.7	2.4	0.3	2.0
E835457	0.22	0.5	84.3	11.4	5.5	83.0	23.5	132	0.5	0.14	< 0.1	< 1	< 0.1	< 0.1	699	45.3	89.3	10.4	39.1	6.0	5.1	0.7	4.0
E835458	0.11	< 0.1	48.7	12.5	3.9	61.3	8.7	142	2.2	0.48	< 0.1	1	< 0.1	< 0.1	526	11.2	24.3	2.7	10.9	1.6	1.8	0.2	1.4
E835459	0.10	< 0.1	45.3	12.6	4.3	46.0	6.9	138	7.0	0.52	< 0.1	< 1	0.1	< 0.1	531	8.1	18.4	2.1	8.4	1.2	1.3	0.2	1.1
E835460	0.04	< 0.1	39.6	6.7	< 0.1	96.0	10.7	17	0.7	0.97	< 0.1	< 1	< 0.1	< 0.1	1020	99.2	189	19.0	65.6	8.9	6.2	0.6	2.6
E835461	0.15	< 0.1	51.9	19.5	1.8	68.6	9.6	27	0.2	0.52	< 0.1	1	< 0.1	< 0.1	537	14.2	28.2	3.2	12.7	2.0	2.0	0.3	1.6
E835462	0.14	< 0.1	46.0	13.9	7.4	52.8	9.3	159	0.2	0.16	< 0.1	< 1	< 0.1	< 0.1	501	11.2	27.4	2.6	10.1	2.0	1.8	0.3	1.5
E835463	0.22	< 0.1	58.0	19.2	5.1	52.7	10.9	72	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	348	9.2	20.2	2.1	9.6	1.7	1.9	0.3	1.8
E835464	0.12	< 0.1	44.2	11.7	1.9	64.5	10.9	108	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	562	13.5	30.8	3.4	13.0	2.4	2.2	0.3	1.8
E835465	0.06	< 0.1	26.6	8.4	0.8	51.5	8.8	116	2.7	0.28	< 0.1	< 1	< 0.1	< 0.1	564	10.4	23.0	2.7	10.8	1.9	1.8	0.2	1.5
E835466	0.06	< 0.1	27.7	8.4	< 0.1	49.0	12.0	58	1.0	0.24	< 0.1	< 1	< 0.1	< 0.1	538	20.0	42.5	4.7	17.9	3.0	2.7	0.4	2.0
E835467	0.10	0.2	44.3	9.3	< 0.1	69.9	12.9	139	0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	664	22.8	45.5	5.3	20.4	2.8	2.9	0.4	2.2
E835468	0.07	< 0.1	31.7	5.7	< 0.1	52.4	12.2	133	1.5	0.18	< 0.1	< 1	< 0.1	< 0.1	574	21.4	41.8	5.1	19.5	3.0	2.7	0.4	2.2
E835469	0.07	< 0.1	31.9	9.0	< 0.1	50.3	11.5	49	1.2	0.65	< 0.1	< 1	< 0.1	< 0.1	548	17.2	36.7	4.3	17.0	3.0	2.6	0.3	2.0
E835470	0.73	< 0.1	54.9	16.9	7.1	489	12.5	55	0.3	2.15	< 0.1	< 1	0.1	< 0.1	56	3.3	7.9	1.2	5.9	1.6	2.2	0.4	2.2
E835471	0.12	< 0.1	50.4	9.8	< 0.1	70.3	15.1	167	3.1	0.34	< 0.1	2	< 0.1	< 0.1	629	29.4	54.5	6.8	25.0	4.5	3.4	0.4	2.6
E835472	0.09	< 0.1	38.9	7.7	< 0.1	68.3	14.5	165	0.1	0.19	< 0.1	< 1	< 0.1	< 0.1	658	28.8	54.5	6.5	24.4	4.5	3.3	0.4	2.6
E835473	0.08	< 0.1	29.2	8.0	< 0.1	62.1	9.3	65	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	589	16.6	34.4	3.6	13.7	2.4	1.8	0.3	1.5
E835474	0.17	< 0.1	68.8	12.7	< 0.1	117	12.5	91	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	701	23.8	60.0	5.4	19.8	3.9	2.9	0.4	2.1
E835475	0.09	< 0.1	33.9	9.8	0.2	58.5	11.0	189	0.5	0.12	< 0.1	< 1	< 0.1	< 0.1	561	17.3	39.0	4.2	15.4	2.9	2.5	0.3	1.8
E835476	0.18	< 0.1	46.8	13.9	1.2	51.7	15.9	295	1.9	0.57	< 0.1	< 1	< 0.1	< 0.1	478	32.3	65.6	7.0	25.3	4.2	3.5	0.4	2.6
E835477	0.07	< 0.1	28.5	8.3	< 0.1	42.3	11.0	140	1.0	0.22	< 0.1	< 1	< 0.1	< 0.1	508	17.5	37.6	4.3	16.2	2.9	2.3	0.3	2.0
E835478	0.09	< 0.1	32.0	10.1	< 0.1	47.7	10.0	128	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	526	12.3	26.1	3.3	12.7	2.5	2.0	0.3	1.7
E835479	0.12	< 0.1	41.4	11.3	0.9	52.5	10.8	196	1.5	0.39	< 0.1	< 1	< 0.1	< 0.1	489	15.9	32.7	3.8	14.1	2.5	2.2	0.3	1.9
E835480	0.02	< 0.1	41.4	11.0	< 0.1	57.1	3.0	231	5.3	0.66	< 0.1	< 1	0.1	< 0.1	752	19.3	53.3	4.3	14.8	2.0	1.6	0.1	0.6
E835481	0.13	< 0.1	40.5	14.7	37.2	42.9	10.8	151	1.1	0.40	< 0.1	< 1	< 0.1	< 0.1	470	16.2	34.2	3.9	14.8	2.2	2.2	0.3	1.9
E835482	0.12	< 0.1	44.3	14.9	0.7	55.0	9.7	148	2.2	0.61	< 0.1	1	< 0.1	< 0.1	544	12.0	24.4	2.8	10.8	1.9	1.7	0.2	1.6
E835483	0.18	< 0.1	93.3	23.0	2.6	70.1	10.6	48	4.6	0.89	< 0.1	1	< 0.1	< 0.1	530	19.1	38.2	4.3	15.8	2.7	2.4	0.3	1.9
E835484	0.15	0.2	56.1	16.2	1.3	56.3	11.5	138	0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	486	21.8	46.3	4.9	18.6	3.2	2.4	0.3	1.9
E835485	0.14	< 0.1	70.1	14.5	61.3	59.3	12.8	115	0.3	0.26	< 0.1	< 1	0.1	< 0.1	492	17.9	36.2	3.9	14.3	2.3	2.3	0.3	2.2

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835486	0.13	0.3	69.3	14.5	1.0	45.1	10.4	195	3.9	0.53	< 0.1	1	0.1	< 0.1	475	11.3	23.6	2.8	10.7	2.5	1.9	0.3	1.7
E835487	0.07	< 0.1	35.4	10.2	< 0.1	47.2	10.4	149	2.9	0.26	< 0.1	< 1	< 0.1	< 0.1	535	13.1	28.1	3.5	13.6	2.5	2.2	0.3	1.7
E835488	0.07	< 0.1	33.5	9.7	0.1	41.6	10.9	177	7.1	0.44	< 0.1	< 1	< 0.1	< 0.1	535	11.4	25.5	3.3	13.8	2.7	2.4	0.3	2.0
E835489	0.12	< 0.1	47.6	11.6	0.7	84.4	10.5	134	1.6	0.21	< 0.1	1	< 0.1	< 0.1	667	17.6	43.0	4.0	14.9	2.7	2.3	0.3	1.8
E835490	0.97	< 0.1	56.2	17.3	5.4	538	15.4	47	< 0.1	0.83	< 0.1	< 1	< 0.1	< 0.1	57	4.0	10.1	1.4	6.9	2.0	2.5	0.4	2.8
E835491	0.11	< 0.1	38.5	14.9	< 0.1	65.5	10.0	102	0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	512	17.4	36.1	4.1	15.7	2.5	2.1	0.3	1.6
E835492	0.11	< 0.1	44.0	13.1	0.5	50.7	9.8	135	0.1	0.20	< 0.1	< 1	< 0.1	< 0.1	497	19.3	42.2	4.1	14.9	2.4	2.1	0.3	1.7
E835493	0.11	< 0.1	51.6	11.2	1.5	66.3	10.1	177	0.9	0.25	< 0.1	< 1	< 0.1	< 0.1	556	23.9	53.9	5.1	18.3	2.7	2.4	0.3	1.8
E835494	0.08	< 0.1	28.3	11.0	< 0.1	51.6	8.3	170	1.7	0.39	< 0.1	< 1	< 0.1	< 0.1	473	12.7	26.2	3.0	11.2	1.7	1.7	0.2	1.3
E835495	0.11	0.3	43.6	15.8	3.7	58.3	8.9	217	6.2	0.69	< 0.1	1	0.1	< 0.1	470	17.5	37.9	3.9	15.2	3.0	2.2	0.3	1.8
E835496	0.07	0.3	22.8	13.6	1.4	41.9	6.1	107	4.7	0.38	< 0.1	< 1	0.1	< 0.1	456	8.9	18.5	2.1	8.3	1.6	1.4	0.2	1.2
E835497	0.05	0.4	35.0	13.3	0.7	44.1	7.1	128	4.4	0.31	< 0.1	< 1	0.1	< 0.1	465	13.1	25.0	2.8	11.0	2.0	1.6	0.2	1.3
E835498	0.06	0.1	28.4	13.9	1.0	31.2	6.2	116	7.4	0.33	< 0.1	1	0.2	< 0.1	462	6.9	15.8	1.9	8.1	1.8	1.5	0.2	1.3
E835499	0.07	0.2	26.6	15.1	1.2	57.8	7.9	190	3.2	0.51	< 0.1	< 1	0.1	< 0.1	525	12.3	24.7	2.8	11.3	2.1	1.6	0.2	1.5
E835500	< 0.02	< 0.1	53.6	16.0	< 0.1	108	10.4	154	3.4	1.02	< 0.1	< 1	< 0.1	< 0.1	745	63.1	131	13.3	51.5	8.0	4.7	0.4	2.5
E835201	0.10	0.9	74.8	12.3	12.3	64.8	15.9	49	0.9	0.64	< 0.1	< 1	0.1	< 0.1	514	32.8	57.3	6.7	27.0	4.9	3.7	0.4	3.0
E835202	0.02	5.1	7.7	1.4	7.6	4.9	12.2	3	1.1	0.56	< 0.1	< 1	1.0	< 0.1	185	28.6	45.0	5.6	22.1	3.2	2.8	0.3	2.0
E835203	0.04	0.3	13.2	7.1	< 0.1	13.3	8.9	27	0.1	0.76	< 0.1	< 1	0.1	< 0.1	143	31.6	48.5	5.4	20.4	3.0	2.6	0.3	1.8
E835204	0.07	2.3	79.5	1.9	308	11.5	232	4	1.9	0.71	< 0.1	< 1	1.3	< 0.1	198	462	158	100	372	64.4	49.4	5.9	31.3
E835205	0.08	0.4	46.7	8.3	1.4	42.2	11.7	160	7.1	0.75	< 0.1	< 1	0.2	< 0.1	471	21.7	43.7	5.0	19.2	3.5	2.6	0.3	1.9
E835206	0.07	0.5	33.8	6.9	1.8	34.1	9.7	130	4.5	0.67	< 0.1	< 1	0.2	< 0.1	389	17.5	36.5	4.0	14.8	2.8	2.2	0.3	1.5
E835207	0.02	1.1	24.0	< 0.1	< 0.1	2.8	2.4	3	0.4	1.48	< 0.1	< 1	0.5	< 0.1	152	4.0	6.0	0.9	3.4	0.4	0.5	0.1	0.3
E835208	0.10	0.8	26.7	7.4	26.8	28.9	9.2	96	2.6	1.05	< 0.1	< 1	0.2	0.2	304	15.2	27.2	3.6	13.3	2.2	2.0	0.3	1.5
E835209	0.13	2.2	23.4	3.2	35.7	18.3	57.0	9	1.9	1.08	< 0.1	< 1	0.2	< 0.1	281	269	422	53.8	193	28.4	20.2	2.2	11.3
E835210	0.63	< 0.1	88.2	16.6	5.3	550	15.5	52	< 0.1	2.04	< 0.1	< 1	< 0.1	< 0.1	59	4.0	10.2	1.4	6.8	2.2	2.5	0.4	2.6
E835211	0.07	4.8	6.5	< 0.1	14.6	6.9	16.5	1	1.2	1.52	< 0.1	< 1	1.8	< 0.1	291	35.2	66.4	8.6	32.4	5.4	4.0	0.5	2.8
E835212	0.11	1.9	62.4	7.0	134	12.7	61.7	15	1.6	0.73	< 0.1	< 1	0.3	< 0.1	302	124	137	25.7	102	16.5	13.5	1.6	9.0
E835213	0.08	0.1	51.2	6.9	7.4	41.8	9.7	18	2.6	0.47	< 0.1	< 1	0.1	< 0.1	430	17.7	37.2	4.2	15.6	2.9	2.2	0.3	1.7
E835214	0.08	0.7	47.6	3.7	39.2	21.9	8.4	2	2.2	0.79	< 0.1	< 1	0.2	< 0.1	316	16.0	33.2	3.6	13.1	2.3	1.9	0.2	1.3
E835215	0.05	3.0	9.1	< 0.1	286	4.6	84.9	9	0.5	0.55	< 0.1	< 1	1.2	< 0.1	221	110	50.1	22.6	88.9	15.5	13.2	1.7	9.8
E835216	0.24	< 0.1	101	15.8	1.3	117	21.6	127	1.9	0.18	< 0.1	< 1	< 0.1	< 0.1	727	48.1	95.4	10.4	38.6	7.1	5.1	0.6	3.7
E835217	0.16	< 0.1	63.6	10.1	1.9	85.1	16.3	118	2.3	0.34	< 0.1	< 1	< 0.1	< 0.1	602	35.5	72.1	7.9	29.3	5.1	3.9	0.5	2.9
E835218	0.03	0.9	13.2	0.7	< 0.1	10.5	3.6	3	0.8	1.10	< 0.1	< 1	0.2	< 0.1	195	6.8	11.6	1.6	5.9	1.1	0.8	0.1	0.6
E835219	0.10	< 0.1	46.7	10.7	1.0	48.0	9.1	165	9.4	0.41	< 0.1	1	0.2	< 0.1	593	12.1	27.8	3.4	12.8	2.7	2.1	0.3	1.7
E835220	0.03	< 0.1	62.1	9.5	< 0.1	122	18.4	62	0.7	1.72	< 0.1	< 1	< 0.1	< 0.1	1060	121	249	26.1	93.7	15.8	9.1	0.8	4.1
E835221	0.53	0.2	69.8	16.7	55.7	7.2	25.4	69	1.4	1.49	< 0.1	< 1	< 0.1	< 0.1	130	13.7	18.8	3.3	14.3	2.9	3.6	0.6	3.8
E835222	0.08	< 0.1	28.5	10.4	10.1	43.9	13.4	99	1.2	0.20	< 0.1	< 1	< 0.1	< 0.1	494	29.1	66.2	6.4	23.2	3.8	3.0	0.4	2.3
E835223	0.17	< 0.1	74.8	15.5	3.9	74.2	14.5	113	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	449	15.5	36.2	3.5	12.7	2.7	2.3	0.4	2.3
E835224	0.06	< 0.1	22.4	8.7	0.3	49.0	8.3	54	1.8	0.61	< 0.1	< 1	< 0.1	< 0.1	536	12.8	27.0	3.0	11.6	2.0	1.8	0.2	1.4
E835225	0.08	< 0.1	31.0	11.0	1.1	48.9	9.1	149	2.7	0.65	< 0.1	< 1	< 0.1	< 0.1	537	11.3	25.1	2.8	11.2	2.1	1.8	0.2	1.5
E835226	0.15	< 0.1	54.2	14.1	0.4	58.6	11.5	159	0.3	0.11	< 0.1	< 1	< 0.1	< 0.1	496	17.5	35.7	3.9	15.3	2.5	2.3	0.3	1.9
E835227	0.14	< 0.1	64.3	14.1	< 0.1	37.5	19.1	157	0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	392	17.7	42.4	5.4	22.3	4.7	3.9	0.5	3.2
E835228	0.21	< 0.1	65.5	16.0	< 0.1	46.1	23.0	223	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	392	35.3	74.0	9.1	34.2	6.4	5.1	0.7	3.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835229	0.24	< 0.1	68.9	15.3	1.1	55.4	20.5	164	0.1	0.22	< 0.1	< 1	< 0.1	< 0.1	427	34.8	68.3	7.8	29.4	4.6	4.1	0.6	3.4
E835230	0.76	< 0.1	54.5	16.5	5.3	557	15.7	39	< 0.1	0.31	< 0.1	< 1	< 0.1	< 0.1	62	4.0	10.1	1.5	6.7	1.9	2.5	0.4	2.7
E835231	0.34	< 0.1	106	24.1	4.2	111	10.4	106	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	385	16.5	32.4	3.2	11.4	2.5	1.8	0.2	1.6
E835232	0.21	< 0.1	90.1	17.3	0.4	84.2	18.5	125	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	449	19.4	42.1	5.2	21.9	4.4	3.9	0.5	3.2
E835233	0.12	< 0.1	39.1	10.6	0.9	72.5	12.7	148	1.0	0.34	< 0.1	1	< 0.1	< 0.1	555	25.9	53.5	6.1	22.4	4.1	3.1	0.4	2.2
E835234	0.17	< 0.1	31.3	13.8	< 0.1	37.1	9.9	103	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	435	8.4	17.7	2.2	8.6	1.9	1.6	0.3	1.6
E835235	0.18	< 0.1	29.5	14.1	< 0.1	39.3	11.8	189	< 0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	430	14.0	29.6	3.6	13.6	2.6	2.2	0.3	1.9
E835236	0.10	< 0.1	27.7	10.8	< 0.1	31.9	8.7	209	6.1	0.40	< 0.1	1	< 0.1	< 0.1	521	9.7	21.5	2.8	11.2	2.2	1.8	0.3	1.5
E835237	0.15	< 0.1	21.5	10.0	0.3	42.1	10.1	188	4.0	0.30	< 0.1	< 1	< 0.1	< 0.1	536	13.2	27.5	3.3	12.9	2.3	2.1	0.3	1.6
E835238	0.14	< 0.1	28.1	11.5	< 0.1	40.3	10.9	191	4.3	0.32	< 0.1	1	< 0.1	< 0.1	459	12.9	28.1	3.4	13.5	2.8	2.2	0.3	1.8
E835239	0.13	< 0.1	22.7	11.5	< 0.1	46.8	8.5	127	4.5	0.38	< 0.1	1	0.1	< 0.1	551	13.8	27.8	3.3	12.5	2.2	1.8	0.2	1.4
E835240	0.10	< 0.1	53.4	9.4	< 0.1	107	14.7	59	2.1	1.24	< 0.1	< 1	< 0.1	< 0.1	1040	88.5	178	19.3	69.1	10.9	6.8	0.6	3.3
E835241	0.16	< 0.1	30.7	10.2	< 0.1	45.4	8.4	90	1.7	0.34	< 0.1	1	< 0.1	< 0.1	551	16.0	31.8	3.8	14.0	2.9	2.0	0.2	1.4
E835242	0.14	< 0.1	33.6	11.6	< 0.1	38.2	11.7	169	3.3	0.55	< 0.1	1	< 0.1	< 0.1	464	16.7	35.8	4.2	15.9	3.5	2.5	0.3	2.0
E835243	0.11	< 0.1	36.0	11.9	< 0.1	35.7	12.4	184	0.4	0.18	< 0.1	< 1	< 0.1	< 0.1	445	18.9	40.7	4.6	17.7	3.3	2.7	0.4	2.2
E835244	0.10	< 0.1	22.7	8.9	< 0.1	42.8	10.3	170	1.8	0.20	< 0.1	< 1	< 0.1	< 0.1	516	14.0	30.0	3.4	12.6	2.9	2.0	0.3	1.6
E835245	0.18	< 0.1	47.9	16.9	1.5	45.5	11.8	160	11.1	0.65	< 0.1	1	0.2	< 0.1	507	13.0	28.8	3.2	11.9	2.2	2.0	0.3	1.8
E835246	0.15	< 0.1	63.0	14.9	0.4	40.6	15.0	113	2.1	0.91	< 0.1	1	< 0.1	< 0.1	333	29.2	59.9	6.7	25.1	4.2	3.5	0.5	2.6
E835247	0.16	0.6	59.7	19.9	1.4	14.1	5.0	97	8.6	0.92	< 0.1	2	0.2	< 0.1	192	6.6	14.9	1.8	7.5	1.5	1.1	0.2	0.9
E835248	0.19	< 0.1	54.7	12.7	< 0.1	35.8	15.3	185	0.5	0.33	< 0.1	1	< 0.1	< 0.1	350	26.4	51.5	5.7	20.9	4.3	3.1	0.4	2.4
E835249	0.20	< 0.1	61.1	13.7	< 0.1	63.5	9.6	160	4.7	0.58	< 0.1	2	< 0.1	< 0.1	623	14.4	30.1	3.2	11.6	2.5	2.0	0.3	1.7
E835250	0.98	< 0.1	56.2	16.3	3.9	575	15.4	51	< 0.1	0.94	< 0.1	< 1	< 0.1	< 0.1	59	4.0	10.1	1.4	6.8	1.9	2.5	0.4	2.6
E835251	0.38	< 0.1	56.7	18.9	13.5	60.5	10.1	172	0.2	0.28	< 0.1	< 1	< 0.1	< 0.1	459	9.4	19.1	2.1	8.0	1.6	1.6	0.3	1.5
E835252	0.26	< 0.1	35.9	11.7	1.8	45.1	10.4	177	0.3	0.32	< 0.1	1	< 0.1	< 0.1	508	12.9	25.7	2.9	11.0	2.0	2.0	0.3	1.7
E835253	0.60	< 0.1	31.6	12.8	2.4	45.3	8.6	166	0.9	0.37	< 0.1	1	< 0.1	< 0.1	466	10.2	20.7	2.4	9.2	1.9	1.6	0.2	1.4
E835254	0.64	< 0.1	34.2	12.1	2.8	46.8	8.4	184	0.6	0.52	< 0.1	1	< 0.1	< 0.1	522	11.8	23.5	2.7	10.0	1.7	1.6	0.2	1.4
E835255	1.23	< 0.1	69.0	36.1	67.3	35.2	10.6	128	0.4	0.23	< 0.1	< 1	< 0.1	< 0.1	309	11.4	23.6	2.4	9.3	1.8	1.7	0.2	1.6
E835256	0.48	< 0.1	54.1	15.9	15.6	70.6	10.0	87	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	480	16.2	31.7	3.5	13.2	2.3	1.8	0.3	1.6
E835257	0.23	< 0.1	67.8	8.7	5.2	80.8	15.8	113	1.4	0.22	< 0.1	1	< 0.1	< 0.1	544	32.5	67.2	7.3	27.1	4.6	3.6	0.5	2.7
E835258	0.13	< 0.1	36.6	9.3	10.4	35.1	7.2	173	7.7	0.32	< 0.1	1	0.2	< 0.1	567	7.2	17.2	2.2	8.9	1.7	1.5	0.2	1.4
E835259	0.25	< 0.1	58.6	13.2	16.4	53.8	13.7	209	0.9	0.35	< 0.1	1	< 0.1	< 0.1	431	17.5	50.3	4.1	14.7	3.2	2.5	0.4	2.2
E835260	0.08	< 0.1	85.3	13.0	< 0.1	91.4	8.6	291	6.8	1.17	< 0.1	1	< 0.1	< 0.1	877	66.9	131	13.7	47.3	8.5	4.6	0.4	1.8
E835261	0.30	< 0.1	70.6	15.2	26.1	59.6	15.1	259	1.9	0.48	< 0.1	1	< 0.1	< 0.1	418	19.7	61.6	4.5	17.7	3.3	2.9	0.4	2.4
E835262	0.27	< 0.1	57.2	13.8	4.8	57.6	9.3	129	0.2	0.22	< 0.1	< 1	< 0.1	< 0.1	531	14.0	27.6	3.0	11.0	1.9	1.7	0.2	1.4
E835263	0.15	< 0.1	48.5	11.5	12.8	60.8	12.5	176	1.1	0.28	< 0.1	1	< 0.1	< 0.1	529	18.7	41.4	4.4	16.6	2.9	2.6	0.3	2.0
E835264	0.27	< 0.1	78.2	15.5	15.9	78.7	13.1	140	0.3	0.16	< 0.1	< 1	< 0.1	< 0.1	454	17.0	36.3	3.9	14.9	2.8	2.4	0.3	2.1
E835265	0.27	< 0.1	78.7	15.3	14.5	82.9	13.2	120	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	488	20.3	44.1	4.5	16.1	3.3	2.5	0.4	2.1
E835266	0.31	< 0.1	110	19.4	131	31.1	13.6	129	0.1	0.31	< 0.1	< 1	< 0.1	< 0.1	384	43.9	68.4	8.5	30.3	4.7	3.5	0.4	2.0
E835267	0.24	< 0.1	33.1	13.5	9.9	52.7	8.8	168	1.5	0.56	< 0.1	1	< 0.1	< 0.1	496	11.5	22.2	2.4	9.4	1.8	1.6	0.2	1.4
E835268	0.24	0.2	43.9	13.7	18.8	45.9	10.4	167	0.7	0.60	< 0.1	1	< 0.1	< 0.1	491	11.0	21.9	2.4	9.5	1.8	1.7	0.3	1.6
E835269	0.98	0.2	101	19.0	301	63.9	14.4	139	0.1	0.19	< 0.1	< 1	< 0.1	< 0.1	345	21.0	51.9	4.3	15.7	2.6	2.6	0.4	2.3
E835270	0.73	< 0.1	53.6	15.6	4.6	540	14.9	42	< 0.1	0.29	< 0.1	< 1	< 0.1	< 0.1	71	3.8	9.5	1.3	6.4	2.0	2.3	0.4	2.4
E835271	0.18	< 0.1	24.9	10.0	9.6	41.6	9.8	147	1.7	0.37	< 0.1	1	< 0.1	< 0.1	498	14.9	39.8	3.4	12.9	2.4	1.9	0.3	1.6



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835272	0.31	< 0.1	80.5	20.4	78.3	20.9	15.8	86	0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	298	9.4	19.3	2.3	8.8	1.7	2.0	0.3	2.4
E835273	0.30	< 0.1	89.8	14.0	10.3	52.7	15.8	123	0.3	0.17	< 0.1	< 1	< 0.1	< 0.1	332	33.5	61.7	5.8	20.9	3.3	3.1	0.4	2.7
E835274	0.28	< 0.1	86.5	12.7	1.3	96.6	18.8	111	0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	624	39.3	80.3	8.7	32.5	5.1	4.3	0.6	3.2
E835275	0.21	0.1	58.1	16.2	6.4	36.0	5.0	134	9.8	0.56	< 0.1	2	0.3	< 0.1	463	3.8	8.6	1.1	4.2	0.8	0.9	0.2	1.0
E835276	0.24	< 0.1	82.7	14.0	1.7	37.5	13.6	118	0.1	0.14	< 0.1	< 1	< 0.1	< 0.1	401	10.2	21.4	2.6	10.1	2.1	2.1	0.3	2.2
E835277	0.13	0.1	29.2	7.6	15.9	43.3	19.7	168	4.0	0.28	< 0.1	1	0.1	< 0.1	475	36.3	60.0	8.5	33.1	5.8	4.5	0.5	3.2
E835278	0.14	< 0.1	37.7	8.6	18.6	50.1	22.0	148	3.5	0.46	< 0.1	1	0.2	< 0.1	469	40.8	69.7	9.2	35.7	6.4	5.1	0.6	3.7
E835279	0.17	< 0.1	32.7	11.3	1.0	38.9	10.6	163	0.2	0.13	< 0.1	< 1	< 0.1	< 0.1	434	8.6	18.3	2.2	9.1	1.9	1.7	0.3	1.7
E835280	0.07	< 0.1	53.1	5.3	< 0.1	102	8.3	183	3.8	0.85	< 0.1	2	< 0.1	< 0.1	932	70.0	135	14.2	48.3	7.0	4.4	0.4	1.9
E835281	0.13	< 0.1	34.6	10.7	2.2	57.3	7.4	112	4.5	0.38	< 0.1	1	< 0.1	< 0.1	555	10.4	20.3	2.2	8.3	1.4	1.3	0.2	1.1
E835282	0.19	< 0.1	58.7	15.3	10.0	38.5	10.2	99	0.2	0.08	< 0.1	< 1	< 0.1	< 0.1	368	17.8	36.2	3.8	13.9	2.0	2.0	0.3	1.7
E835283	0.14	< 0.1	40.2	17.9	< 0.1	13.0	6.5	123	1.4	0.27	< 0.1	< 1	< 0.1	< 0.1	188	5.6	10.8	1.1	4.4	0.9	1.0	0.2	1.0
E835284	0.26	< 0.1	57.3	11.8	41.1	60.7	32.1	194	0.3	0.68	< 0.1	1	< 0.1	< 0.1	373	65.8	95.9	13.7	51.5	9.0	6.8	0.9	5.3
E835285	0.25	< 0.1	79.8	19.9	213	1.6	7.0	134	10.5	1.40	< 0.1	1	0.8	< 0.1	166	5.9	12.1	1.6	6.2	1.3	1.2	0.2	1.5
E835286	0.18	< 0.1	36.0	8.6	28.5	66.3	9.2	109	5.3	0.42	< 0.1	1	0.6	< 0.1	483	11.1	22.6	2.8	10.1	2.2	1.8	0.2	1.5
E835287	0.14	< 0.1	29.7	6.8	17.2	64.6	9.1	115	4.2	0.86	< 0.1	< 1	0.4	< 0.1	515	12.9	27.3	3.0	11.9	2.2	1.8	0.3	1.6
E835288	0.17	< 0.1	42.7	9.3	15.5	44.5	8.2	155	4.6	0.53	< 0.1	1	0.1	< 0.1	427	10.4	22.2	2.5	9.3	1.8	1.5	0.2	1.4
E835289	0.15	< 0.1	31.7	2.2	< 0.1	50.3	12.3	137	1.5	0.20	< 0.1	1	< 0.1	< 0.1	514	22.1	44.2	5.2	19.6	3.5	2.7	0.4	2.0
E835290	0.85	< 0.1	52.6	16.5	5.0	519	14.7	48	< 0.1	0.93	< 0.1	< 1	< 0.1	< 0.1	59	3.8	9.4	1.4	6.3	2.0	2.4	0.4	2.5
E835291	0.17	< 0.1	34.3	4.6	0.2	54.1	12.8	151	2.5	0.21	< 0.1	1	< 0.1	< 0.1	566	23.2	48.6	5.2	19.5	3.2	2.9	0.4	2.2
E835292	0.17	< 0.1	33.5	1.9	0.6	50.7	12.3	142	2.4	0.31	< 0.1	1	< 0.1	< 0.1	519	22.4	45.6	5.2	19.7	3.5	2.9	0.4	2.1
E835293	0.16	< 0.1	35.9	3.8	< 0.1	55.9	14.7	141	2.2	0.33	< 0.1	1	< 0.1	< 0.1	567	25.5	51.8	6.0	22.5	4.0	3.3	0.4	2.5
E835294	0.14	< 0.1	35.5	3.0	< 0.1	51.1	12.4	14	1.0	0.29	< 0.1	< 1	< 0.1	< 0.1	504	22.1	45.7	5.2	19.4	3.8	2.8	0.4	2.2
E835295	0.11	< 0.1	28.2	4.6	6.0	50.5	11.4	137	4.7	0.32	< 0.1	1	0.1	< 0.1	582	18.5	38.2	4.3	16.4	2.9	2.4	0.3	2.0
E835296	0.17	< 0.1	39.6	2.0	2.1	50.3	10.9	160	7.6	0.35	< 0.1	2	0.2	< 0.1	561	17.3	33.4	4.2	16.3	3.0	2.4	0.3	1.9
E835297	0.23	< 0.1	74.2	5.9	6.1	79.2	14.0	137	2.5	0.28	< 0.1	2	< 0.1	< 0.1	639	27.1	58.7	6.4	23.6	4.4	3.4	0.4	2.5
E835298	0.22	< 0.1	48.7	8.6	40.8	44.3	10.4	189	7.2	0.42	< 0.1	2	0.2	< 0.1	518	15.9	38.7	4.0	15.4	2.5	2.2	0.3	1.8
E835299	0.24	< 0.1	64.0	6.3	58.2	47.0	14.3	249	8.3	0.45	< 0.1	2	0.2	< 0.1	551	26.2	60.8	6.1	22.8	3.7	3.2	0.4	2.5
E835300	0.07	< 0.1	47.7	0.4	< 0.1	82.5	6.2	265	6.8	0.82	< 0.1	1	0.2	< 0.1	892	25.6	61.1	6.0	21.1	3.8	2.4	0.3	1.3
E835301	0.15	< 0.1	49.0	6.3	12.7	26.5	5.6	126	5.4	0.30	< 0.1	1	0.3	< 0.1	466	5.2	12.9	1.6	6.3	1.4	1.2	0.2	1.0
E835302	0.23	< 0.1	73.1	10.8	27.2	23.9	10.6	216	8.9	0.44	< 0.1	2	0.4	< 0.1	385	10.0	23.1	2.8	11.5	2.4	2.1	0.3	2.0
E835303	0.40	0.4	71.3	11.9	26.3	18.4	17.2	120	7.9	0.53	< 0.1	2	0.5	< 0.1	345	12.7	13.3	3.7	16.0	3.3	3.0	0.4	2.7
E835304	0.20	< 0.1	56.7	13.6	22.3	9.9	3.0	140	8.1	0.47	< 0.1	2	0.3	< 0.1	306	2.3	5.3	0.7	2.9	0.7	0.6	0.1	0.7
E835305	0.24	0.1	45.5	13.4	10.4	21.1	8.3	121	0.9	0.47	< 0.1	1	< 0.1	< 0.1	309	7.2	15.1	1.7	6.8	1.3	1.4	0.2	1.4
E835306	0.60	< 0.1	59.4	12.8	52.8	50.5	8.6	151	7.3	1.07	< 0.1	2	0.4	< 0.1	347	9.5	18.9	2.0	7.7	1.2	1.3	0.2	1.4
E835307	0.35	< 0.1	56.5	16.3	47.9	47.3	9.7	131	1.6	0.42	< 0.1	< 1	0.1	< 0.1	377	7.2	15.3	1.7	6.5	1.4	1.5	0.2	1.6
E835308	0.29	< 0.1	66.4	16.4	27.1	29.0	24.3	356	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	295	30.1	61.0	6.8	26.4	5.1	4.2	0.6	3.7
E835309	0.46	< 0.1	78.5	22.0	119	38.7	21.9	243	< 0.1	0.08	< 0.1	< 1	0.1	< 0.1	337	30.9	61.1	6.7	25.5	5.9	4.2	0.6	3.6
E835310	0.54	14.4	157	22.5	1400	89.6	18.0	81	6.8	3.19	< 0.1	2	24.0	< 0.1	40	15.6	36.4	4.8	20.2	4.0	3.8	0.5	3.1
E835311	0.26	< 0.1	54.7	9.6	6.4	58.1	12.3	134	0.8	1.94	< 0.1	1	< 0.1	< 0.1	461	24.0	48.3	5.2	19.4	3.8	3.3	0.4	2.3
E835312	0.28	< 0.1	56.8	11.7	6.5	62.1	10.8	138	1.2	0.64	< 0.1	1	< 0.1	< 0.1	427	12.2	24.7	2.6	10.2	1.9	1.9	0.3	1.8
E835313	0.19	< 0.1	41.9	8.3	5.4	45.2	8.8	118	1.6	0.56	< 0.1	1	< 0.1	< 0.1	437	11.5	23.5	2.6	10.2	1.7	1.7	0.2	1.4
E835314	0.18	1.4	62.5	7.2	194	13.0	16.9	57	4.2	0.72	< 0.1	< 1	1.3	< 0.1	279	17.5	40.1	5.2	21.7	5.0	4.1	0.5	3.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835315	0.18	< 0.1	24.1	7.9	10.5	19.2	4.2	148	6.7	0.50	< 0.1	1	0.2	< 0.1	432	2.7	6.7	0.9	3.9	0.8	0.9	0.1	0.9
E835316	0.37	< 0.1	132	12.8	14.9	70.7	11.8	124	0.5	0.37	< 0.1	1	< 0.1	< 0.1	430	11.0	26.2	2.8	11.4	2.0	2.1	0.3	1.8
E835317	0.42	1.8	52.6	18.5	141	20.5	29.6	89	5.1	1.02	< 0.1	2	0.6	< 0.1	304	44.0	65.7	10.7	42.8	7.1	6.2	0.8	4.5
E835318	0.22	< 0.1	59.5	16.7	8.2	23.6	12.7	102	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	295	17.2	34.0	3.8	14.5	2.7	2.3	0.3	2.1
E835319	0.31	< 0.1	72.8	14.7	3.5	69.3	13.1	205	0.7	0.42	< 0.1	1	< 0.1	< 0.1	485	15.2	32.3	3.5	13.1	2.4	2.2	0.3	2.2
E835320	0.07	< 0.1	43.9	< 0.1	< 0.1	111	17.9	14	0.7	0.72	< 0.1	< 1	< 0.1	< 0.1	1020	131	254	26.5	92.7	14.8	9.1	0.8	3.9
E835321	0.32	< 0.1	72.7	13.7	3.8	64.7	12.2	175	0.3	0.13	< 0.1	< 1	< 0.1	< 0.1	527	19.5	39.8	4.2	15.8	3.2	2.4	0.3	2.1
E835322	0.28	< 0.1	74.3	16.0	10.1	37.3	11.5	97	0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	451	40.2	84.1	7.2	25.0	4.2	3.0	0.4	2.2
E835323	0.25	< 0.1	79.1	10.4	14.1	88.8	22.3	146	0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	631	69.0	111	14.6	52.2	8.5	6.0	0.7	4.2
E835324	0.21	0.1	44.6	9.6	36.0	46.0	9.9	133	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	463	14.8	27.7	3.1	11.3	1.8	1.8	0.3	1.6
E835325	0.44	< 0.1	89.8	19.0	31.0	60.9	11.5	143	0.9	0.19	< 0.1	< 1	< 0.1	< 0.1	449	14.8	33.2	3.0	11.6	2.3	2.0	0.3	1.9
E835326	0.17	< 0.1	59.9	12.4	21.8	23.4	4.1	164	10.7	0.80	< 0.1	2	0.4	< 0.1	467	3.4	10.6	1.0	4.4	0.8	0.9	0.1	0.9
E835327	0.28	0.2	93.1	15.0	15.4	46.8	9.6	151	1.2	0.99	< 0.1	1	< 0.1	< 0.1	391	12.5	26.2	2.9	10.8	2.2	1.8	0.3	1.7
E835328	0.35	< 0.1	105	16.0	17.4	65.7	12.9	144	0.2	0.75	< 0.1	< 1	< 0.1	< 0.1	360	13.9	29.1	3.1	12.0	2.2	2.3	0.3	2.1
E835329	0.19	< 0.1	41.5	9.3	26.0	49.4	9.4	107	0.3	0.22	< 0.1	< 1	< 0.1	< 0.1	474	10.7	21.8	2.4	9.3	1.6	1.5	0.2	1.4
E835330	0.92	< 0.1	53.9	19.4	4.4	565	14.7	39	< 0.1	0.23	< 0.1	< 1	< 0.1	< 0.1	69	4.0	9.9	1.4	6.9	1.9	2.6	0.4	2.6
E835331	0.18	< 0.1	42.6	2.6	0.3	63.7	12.9	108	0.2	0.08	< 0.1	< 1	< 0.1	< 0.1	506	26.9	53.0	6.1	22.2	3.7	2.9	0.4	2.2
E835332	0.21	< 0.1	54.4	11.7	1.8	48.7	8.4	144	0.2	0.10	< 0.1	< 1	< 0.1	< 0.1	430	9.0	18.4	2.1	7.8	1.9	1.4	0.2	1.4
E835333	0.27	< 0.1	62.6	13.2	4.5	37.8	10.0	246	0.4	0.23	< 0.1	< 1	< 0.1	< 0.1	388	13.7	29.4	3.0	11.6	2.2	1.9	0.3	1.6
E835334	0.15	< 0.1	39.6	6.8	3.1	51.2	10.1	42	0.9	0.27	< 0.1	< 1	< 0.1	< 0.1	546	13.8	31.4	3.2	12.2	2.2	2.0	0.3	1.7
E835335	0.25	< 0.1	46.7	8.6	27.6	55.1	11.3	103	3.0	0.74	< 0.1	1	< 0.1	< 0.1	456	21.5	42.5	5.0	18.9	3.3	2.5	0.3	1.9
E835336	0.23	< 0.1	50.3	12.1	89.9	58.6	10.4	222	0.6	0.67	< 0.1	1	< 0.1	< 0.1	480	12.8	25.9	2.9	10.7	1.9	1.8	0.3	1.6
E835337	0.15	< 0.1	37.5	8.1	9.2	50.5	8.2	137	0.1	0.20	< 0.1	< 1	< 0.1	< 0.1	504	11.0	22.2	2.5	9.2	1.7	1.5	0.2	1.3
E835338	0.32	< 0.1	48.4	11.7	10.6	44.0	8.8	150	0.1	0.23	< 0.1	< 1	< 0.1	< 0.1	418	8.4	17.3	1.9	7.7	1.4	1.4	0.2	1.4
E835339	0.13	< 0.1	34.0	8.9	2.0	41.9	10.4	214	< 0.1	0.14	< 0.1	< 1	< 0.1	< 0.1	479	12.6	25.9	3.1	12.1	2.2	2.0	0.3	1.8
E835340	0.08	< 0.1	57.8	< 0.1	< 0.1	121	18.2	56	4.5	1.38	< 0.1	2	0.1	< 0.1	1080	120	240	25.8	95.0	13.4	9.2	0.8	4.1
E835341	0.13	< 0.1	30.6	8.4	1.6	38.5	7.9	156	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	436	10.5	20.2	2.3	8.6	1.7	1.4	0.2	1.3
E835342	0.15	< 0.1	34.6	3.0	0.3	54.3	13.1	150	0.4	0.14	< 0.1	< 1	< 0.1	< 0.1	551	23.5	48.0	5.3	20.5	3.0	2.8	0.4	2.2
E835343	0.16	< 0.1	41.3	4.2	1.5	59.9	13.9	138	0.1	0.24	< 0.1	< 1	< 0.1	< 0.1	572	24.7	51.3	5.7	21.1	3.7	2.9	0.4	2.2
E835344	0.29	< 0.1	80.6	12.4	19.5	42.1	6.6	132	13.5	1.03	< 0.1	2	0.4	< 0.1	635	6.9	24.0	2.4	9.6	1.8	1.6	0.3	1.5
E835345	0.19	< 0.1	40.8	9.9	13.5	45.0	8.4	141	5.1	0.73	< 0.1	1	< 0.1	< 0.1	479	10.6	20.5	2.3	8.7	1.7	1.5	0.2	1.4
E835346	0.27	< 0.1	79.4	19.3	13.1	46.4	10.4	167	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	314	9.4	27.5	2.1	7.8	1.9	1.5	0.2	1.5
E835347	0.17	< 0.1	51.5	19.9	7.9	35.0	11.0	137	0.1	0.24	< 0.1	< 1	< 0.1	< 0.1	404	11.6	23.0	2.6	9.8	2.0	1.9	0.3	1.7
E835348	0.17	< 0.1	48.7	19.2	5.4	40.7	9.5	94	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	449	10.9	20.8	2.4	9.1	2.0	1.6	0.2	1.5
E835349	0.15	< 0.1	33.5	8.4	8.8	43.9	16.9	74	0.2	0.26	< 0.1	< 1	< 0.1	< 0.1	492	27.2	56.3	6.6	24.3	4.4	3.8	0.5	2.7
E835350	0.82	< 0.1	54.8	19.5	3.8	573	15.3	34	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	59	4.0	9.9	1.4	6.8	1.8	2.5	0.4	2.6
E832156	0.16	< 0.1	30.9	15.7	2.4	39.5	5.2	77	3.5	0.77	< 0.1	1	< 0.1	< 0.1	535	4.9	9.9	1.2	4.2	1.1	0.9	0.1	0.8
E832157	0.27	< 0.1	67.7	17.4	< 0.1	29.4	20.7	200	2.3	0.24	< 0.1	< 1	< 0.1	< 0.1	300	33.2	63.1	6.6	24.1	4.0	3.8	0.5	3.1
E832158	0.22	< 0.1	34.9	10.9	0.4	32.3	9.4	131	0.7	0.19	< 0.1	< 1	< 0.1	< 0.1	402	14.6	27.3	3.0	11.1	2.0	1.9	0.3	1.6
E832159	0.09	0.5	4.5	< 0.1	0.3	3.3	2.3	11	1.1	1.04	< 0.1	< 1	0.3	< 0.1	88	4.8	7.1	1.0	3.3	0.5	0.4	0.1	0.3
E832160	0.06	< 0.1	62.3	2.0	< 0.1	114	14.5	435	9.3	2.18	< 0.1	1	< 0.1	< 0.1	1030	99.0	194	20.7	73.6	10.8	6.9	0.6	3.1
E832161	0.36	< 0.1	46.8	10.6	0.3	51.9	11.4	152	3.1	0.94	< 0.1	1	< 0.1	< 0.1	486	19.8	38.7	4.5	16.5	3.4	2.4	0.3	1.9
E832162	0.11	1.1	16.4	0.2	< 0.1	10.7	25.9	6	1.1	1.39	< 0.1	< 1	0.1	< 0.1	243	99.8	149	18.9	66.1	10.6	6.6	0.7	4.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832163	0.20	< 0.1	35.6	11.8	0.3	43.5	12.4	156	0.2	0.30	< 0.1	< 1	< 0.1	< 0.1	491	12.3	24.3	2.7	10.6	2.4	1.9	0.3	2.1
E832164	0.25	< 0.1	54.0	16.9	0.1	40.5	11.0	148	1.9	0.25	< 0.1	< 1	< 0.1	< 0.1	434	16.2	30.7	3.2	12.0	2.3	2.1	0.3	1.7
E832165	0.12	< 0.1	53.8	10.4	< 0.1	51.0	12.4	110	0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	439	19.3	37.2	4.3	16.6	3.0	2.5	0.3	1.9
E832166	0.45	< 0.1	35.5	11.6	0.2	42.5	9.4	129	0.1	0.21	< 0.1	< 1	< 0.1	< 0.1	479	12.9	25.2	2.9	10.5	2.1	1.9	0.2	1.5
E832167	0.17	< 0.1	76.7	22.9	2.3	66.7	4.0	67	0.4	0.14	< 0.1	< 1	< 0.1	< 0.1	500	5.0	9.0	1.0	3.7	0.7	0.7	0.1	0.7
E832168	0.23	< 0.1	56.8	15.9	0.5	18.4	12.9	160	1.4	0.23	< 0.1	< 1	< 0.1	< 0.1	183	9.7	24.3	2.2	7.6	1.6	1.7	0.3	1.9
E832169	0.20	0.1	49.3	10.0	15.5	61.6	38.4	81	4.2	0.75	< 0.1	1	< 0.1	< 0.1	376	89.2	61.5	19.5	72.2	11.9	8.9	1.1	6.4
E832170	0.83	< 0.1	53.2	18.0	7.3	285	5.8	55	3.0	5.11	< 0.1	2	2.8	< 0.1	52	1.5	3.7	0.7	3.4	0.9	1.2	0.2	1.5
E832171	0.42	< 0.1	79.7	14.9	36.9	77.3	14.1	147	0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	451	20.4	38.0	4.4	15.5	3.3	2.5	0.3	2.2
E832172	0.12	< 0.1	70.8	21.0	26.6	10.4	21.2	59	0.5	0.31	< 0.1	< 1	< 0.1	< 0.1	63	13.6	25.6	3.4	14.4	3.3	3.4	0.5	3.5
E832173	0.19	< 0.1	30.5	9.7	3.3	43.5	8.9	146	1.3	0.48	< 0.1	1	< 0.1	< 0.1	454	12.9	25.1	2.7	10.0	1.7	1.6	0.2	1.4
E832174	0.20	< 0.1	38.3	9.0	2.4	48.6	10.2	123	0.3	0.06	< 0.1	< 1	< 0.1	< 0.1	528	18.2	36.7	3.7	13.3	2.0	2.0	0.3	1.8
E832175	0.27	< 0.1	69.1	17.8	5.4	35.2	11.8	92	0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	350	8.1	15.8	1.8	6.8	1.4	1.7	0.3	1.9
E832176	0.39	< 0.1	55.8	16.8	5.3	39.6	12.5	111	0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	364	15.1	28.5	3.2	11.4	2.5	2.1	0.3	2.0
E832177	0.18	< 0.1	110	9.3	2.9	69.3	14.4	103	0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	527	24.7	50.8	5.6	20.9	3.5	3.0	0.4	2.5
E832178	0.24	< 0.1	79.4	12.9	5.3	57.4	13.5	113	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	449	14.1	29.1	3.2	12.1	2.4	2.1	0.3	2.1
E832179	0.08	2.1	13.6	< 0.1	5.7	4.2	12.5	3	0.6	0.52	< 0.1	< 1	3.0	< 0.1	151	29.8	28.3	6.1	21.9	3.6	2.5	0.3	1.8
E832180	0.08	< 0.1	52.7	2.4	< 0.1	80.8	19.2	47	0.5	2.05	< 0.1	< 1	< 0.1	< 0.1	1070	101	196	21.4	75.1	12.7	7.7	0.8	3.8
E832181	0.24	< 0.1	46.2	11.9	1.6	37.4	11.6	150	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	500	14.2	29.3	2.9	11.0	1.9	1.9	0.3	1.8
E832182	0.16	< 0.1	24.4	11.3	0.2	24.2	11.1	311	2.6	1.73	< 0.1	2	< 0.1	< 0.1	968	4.1	9.1	1.3	6.3	1.9	1.7	0.3	1.6
E832183	0.31	< 0.1	63.6	11.3	2.2	41.5	44.4	76	0.1	0.35	< 0.1	1	< 0.1	< 0.1	505	143	327	29.5	109	17.4	13.1	1.5	7.6
E832184	0.20	< 0.1	67.4	10.9	5.6	56.0	15.8	136	0.2	0.13	< 0.1	< 1	< 0.1	< 0.1	502	25.2	49.3	5.5	20.3	3.5	3.1	0.4	2.6
E832185	0.16	0.1	39.1	7.3	3.7	53.5	13.7	102	0.2	0.10	< 0.1	< 1	< 0.1	< 0.1	541	24.9	48.7	5.5	20.9	3.8	2.8	0.4	2.2
E832186	0.17	< 0.1	33.6	5.7	0.9	38.2	13.4	184	2.0	0.27	< 0.1	1	< 0.1	< 0.1	514	23.1	47.3	5.3	20.3	3.3	2.8	0.4	2.3
E832187	0.16	< 0.1	115	18.7	8.6	20.2	16.5	80	0.2	0.09	< 0.1	< 1	< 0.1	< 0.1	248	5.4	11.3	1.4	5.5	1.5	2.0	0.3	2.6
E832188	0.11	< 0.1	87.2	20.4	32.4	1.5	6.9	118	7.5	1.70	< 0.1	1	0.2	0.1	135	0.7	2.0	0.3	1.3	0.4	0.7	0.2	1.2
E832189	0.23	< 0.1	34.4	9.6	3.8	46.0	9.3	151	2.6	0.45	< 0.1	1	< 0.1	< 0.1	489	11.1	26.4	2.5	9.8	1.9	1.7	0.3	1.5
E832190	1.07	< 0.1	53.6	17.6	3.3	329	15.3	50	< 0.1	1.33	< 0.1	< 1	< 0.1	< 0.1	62	4.0	10.1	1.4	6.7	2.0	2.5	0.4	2.7
E832191	0.18	< 0.1	32.7	9.7	15.8	33.7	13.2	144	0.3	0.10	< 0.1	< 1	< 0.1	< 0.1	517	11.9	22.9	2.8	10.8	2.3	2.0	0.3	1.9
E832192	0.27	< 0.1	38.0	15.8	1.2	43.7	11.1	161	0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	505	11.4	22.9	2.6	10.1	2.1	1.9	0.3	1.8
E832193	0.40	< 0.1	41.3	22.2	91.0	24.4	12.9	123	2.1	0.36	< 0.1	< 1	0.2	< 0.1	340	13.4	31.5	3.4	13.1	3.0	2.6	0.4	2.1
E832194	0.17	< 0.1	86.1	21.4	10.5	3.6	22.3	80	0.6	0.26	< 0.1	< 1	0.2	< 0.1	66	6.9	20.7	2.2	9.6	2.2	3.1	0.5	3.4
E832195	0.30	< 0.1	59.1	13.5	43.3	65.5	18.9	115	0.3	0.20	< 0.1	< 1	< 0.1	< 0.1	453	36.2	49.6	7.3	26.4	5.1	3.9	0.5	2.9
E832196	0.41	< 0.1	42.3	17.1	< 0.1	13.9	10.8	128	1.0	0.35	< 0.1	< 1	< 0.1	< 0.1	166	6.4	11.7	1.4	5.1	1.2	1.1	0.2	1.4
E832197	0.19	< 0.1	35.4	9.4	< 0.1	16.5	8.1	108	0.4	0.20	< 0.1	< 1	< 0.1	< 0.1	603	5.0	8.8	1.1	4.2	0.8	0.9	0.1	1.1
E832242	0.15	2.5	16.1	1.0	65.9	15.1	33.0	41	2.4	0.54	< 0.1	< 1	1.3	< 0.1	199	80.2	62.2	15.9	58.5	8.7	6.9	0.8	4.7
E832243	0.09	2.5	43.7	4.6	43.9	5.9	53.9	42	2.0	0.65	< 0.1	< 1	0.6	< 0.1	141	87.1	151	22.4	93.6	17.6	13.9	1.7	8.9
E832244	0.07	2.3	5.8	< 0.1	4.7	3.3	17.4	4	0.5	0.71	< 0.1	< 1	1.4	< 0.1	126	32.9	25.7	7.1	25.8	3.7	2.8	0.4	2.2
E832245	0.16	3.3	15.3	0.5	42.7	15.7	42.8	2	1.6	1.59	< 0.1	< 1	1.1	< 0.1	238	135	190	25.3	91.2	15.1	10.9	1.3	6.9
E832246	0.15	1.0	3.6	< 0.1	24.7	3.3	18.8	3	1.1	1.06	< 0.1	< 1	0.3	< 0.1	106	60.7	91.6	11.1	39.0	5.6	4.5	0.5	2.8
E832247	0.36	0.5	16.1	8.8	16.2	11.0	9.9	38	4.1	1.93	< 0.1	1	0.2	< 0.1	178	17.7	32.9	3.6	13.3	2.4	2.0	0.3	1.5
E832248	0.08	1.5	10.6	< 0.1	2.9	2.2	6.3	3	0.5	0.51	< 0.1	< 1	0.4	< 0.1	232	18.4	34.0	3.6	12.3	2.0	1.4	0.2	0.9
E832249	0.09	1.5	11.4	< 0.1	46.2	5.9	12.1	2	0.9	0.82	< 0.1	< 1	1.5	< 0.1	247	15.6	19.0	3.4	12.5	2.4	2.0	0.2	1.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832250	1.06	< 0.1	54.7	17.2	3.3	353	14.7	23	0.1	0.14	< 0.1	< 1	< 0.1	< 0.1	59	3.9	9.8	1.4	6.7	1.9	2.4	0.4	2.6
E832251	0.10	0.6	6.7	< 0.1	1.3	1.8	6.9	9	0.9	1.02	< 0.1	< 1	0.3	< 0.1	128	14.4	27.6	3.2	11.9	1.8	1.4	0.2	1.1
E832252	0.07	4.0	23.6	< 0.1	3.7	7.1	6.6	27	1.6	0.57	< 0.1	< 1	2.1	< 0.1	294	10.7	12.4	2.5	9.5	1.9	1.2	0.2	1.0
E832253	0.32	< 0.1	86.3	13.7	28.0	82.9	21.3	140	0.3	0.14	< 0.1	1	< 0.1	< 0.1	697	45.0	94.4	9.9	37.2	6.0	4.9	0.6	3.7
E832254	0.09	1.5	28.6	< 0.1	0.8	2.8	3.2	3	0.6	0.75	< 0.1	< 1	0.6	< 0.1	113	5.2	6.6	1.2	4.3	0.7	0.6	0.1	0.5
E832255	0.18	< 0.1	45.8	5.2	< 0.1	51.7	13.8	106	0.4	0.13	< 0.1	< 1	< 0.1	< 0.1	484	25.9	53.9	5.9	21.8	3.7	2.8	0.4	2.3
E832256	0.12	< 0.1	30.4	3.2	0.1	37.8	10.8	112	1.4	0.19	< 0.1	< 1	< 0.1	< 0.1	456	18.9	39.3	4.4	16.4	3.3	2.3	0.3	1.9
E832257	0.07	0.5	39.5	1.4	6.4	15.2	4.2	7	1.7	1.27	< 0.1	< 1	0.1	< 0.1	159	7.0	13.9	1.6	6.1	1.1	0.9	0.1	0.7
E832258	0.22	< 0.1	74.7	12.5	2.2	82.8	16.5	91	0.2	0.11	< 0.1	< 1	< 0.1	< 0.1	595	32.9	65.4	7.4	27.1	4.6	3.6	0.5	2.8
E832259	0.12	0.9	22.6	0.8	0.6	8.1	13.8	< 1	1.2	0.59	< 0.1	< 1	0.2	< 0.1	170	57.5	102	11.2	38.9	5.8	4.2	0.5	2.6
E832260	0.08	< 0.1	63.3	7.8	< 0.1	100	17.5	47	2.9	1.06	< 0.1	1	< 0.1	< 0.1	1050	123	236	25.1	88.7	13.4	8.1	0.8	3.7
E832261	0.23	< 0.1	69.7	8.1	0.7	73.3	16.5	86	0.2	0.08	< 0.1	< 1	< 0.1	< 0.1	535	36.6	72.0	7.9	29.7	4.1	3.8	0.5	2.8
E832262	0.17	< 0.1	40.0	7.3	1.1	33.7	13.8	153	2.1	0.46	< 0.1	1	< 0.1	< 0.1	546	25.6	53.3	5.8	21.2	4.1	2.8	0.4	2.2
E832263	0.14	< 0.1	36.5	8.7	0.2	41.9	13.4	169	1.6	0.31	< 0.1	1	< 0.1	< 0.1	599	21.4	44.2	4.9	18.8	3.0	2.8	0.4	2.1
E832264	0.15	< 0.1	32.9	9.2	0.2	34.8	12.9	43	1.6	0.43	< 0.1	< 1	< 0.1	< 0.1	559	20.3	41.4	4.6	17.5	3.0	2.4	0.4	1.9
E832265	0.15	< 0.1	39.2	10.1	< 0.1	42.8	13.6	102	1.0	1.79	< 0.1	< 1	< 0.1	< 0.1	550	20.9	43.1	5.0	18.5	3.5	2.6	0.4	2.2
E832266	0.22	< 0.1	51.7	11.2	1.2	54.1	15.9	82	0.4	0.08	< 0.1	< 1	< 0.1	< 0.1	699	27.6	65.4	6.4	23.6	4.6	3.3	0.5	2.7
E832267	0.07	1.6	7.9	0.2	5.4	7.5	5.8	7	1.0	2.01	< 0.1	< 1	3.3	< 0.1	149	8.4	15.8	2.0	8.1	0.9	1.0	0.1	0.9
E837051	0.19	< 0.1	65.3	14.9	0.3	46.3	13.6	101	0.2	0.07	< 0.1	< 1	0.1	< 0.1	460	15.0	31.1	3.5	14.0	3.0	2.3	0.3	2.0
E837052	0.14	< 0.1	29.3	9.3	< 0.1	43.4	10.0	115	0.2	0.11	< 0.1	< 1	< 0.1	< 0.1	648	17.0	36.9	3.7	13.9	2.7	2.1	0.3	1.6
E837053	0.19	< 0.1	38.5	10.9	0.5	50.0	9.6	121	0.3	0.19	< 0.1	1	< 0.1	< 0.1	562	15.0	33.1	3.5	13.4	2.6	1.9	0.3	1.5
E837054	0.32	< 0.1	82.9	26.0	4.3	24.8	4.9	226	15.8	1.24	< 0.1	2	0.3	< 0.1	383	3.6	8.7	1.1	4.5	1.1	0.9	0.1	0.9
E837055	0.14	< 0.1	27.5	10.3	< 0.1	34.6	9.4	188	6.1	0.45	< 0.1	1	0.1	< 0.1	563	14.8	28.7	3.5	12.9	2.3	1.9	0.3	1.5
E837056	0.11	< 0.1	27.9	11.0	0.5	33.1	9.0	37	1.8	0.34	< 0.1	< 1	< 0.1	< 0.1	523	14.7	30.2	3.4	12.6	2.2	1.8	0.3	1.5
E837057	0.14	< 0.1	43.3	11.9	< 0.1	30.8	11.9	39	2.3	0.35	< 0.1	< 1	< 0.1	< 0.1	475	18.0	36.1	4.1	15.2	2.7	2.4	0.3	1.9
E837058	0.22	0.2	138	16.8	3.0	40.4	9.4	152	5.2	1.02	< 0.1	2	0.1	< 0.1	304	12.9	27.6	2.9	10.6	1.9	1.8	0.3	1.5
E837059	0.14	< 0.1	33.8	13.7	0.3	33.6	12.3	73	1.1	0.33	< 0.1	1	< 0.1	< 0.1	460	13.8	28.1	3.3	12.2	2.5	2.2	0.3	1.8
E837060	0.11	< 0.1	41.9	8.6	< 0.1	86.0	15.4	59	1.7	0.79	< 0.1	< 1	< 0.1	< 0.1	1120	107	206	21.9	77.1	11.5	7.0	0.7	3.4
E837061	0.17	< 0.1	59.1	15.1	< 0.1	40.7	15.5	121	0.3	0.10	< 0.1	< 1	< 0.1	< 0.1	435	22.6	46.3	5.2	19.2	3.4	3.0	0.4	2.5
E837062	0.20	< 0.1	64.9	14.7	0.1	27.8	17.4	294	8.9	0.50	< 0.1	2	< 0.1	< 0.1	417	21.4	48.8	6.0	22.8	4.4	3.5	0.5	3.0
E837063	0.25	< 0.1	79.3	15.4	0.1	38.0	21.3	367	5.4	0.44	< 0.1	2	< 0.1	< 0.1	383	27.9	56.7	6.5	24.7	3.9	3.8	0.5	3.2
E837064	0.28	< 0.1	149	21.5	2.0	57.6	11.5	232	0.9	0.20	< 0.1	1	< 0.1	< 0.1	404	20.0	38.1	4.1	14.5	2.4	2.1	0.3	1.9
E837065	0.23	0.1	120	18.0	2.3	14.1	5.3	326	15.7	1.02	< 0.1	2	0.3	< 0.1	343	3.7	9.3	1.2	5.3	1.1	1.1	0.2	1.2
E837066	0.12	< 0.1	31.5	9.5	< 0.1	38.5	9.9	188	5.4	0.27	< 0.1	1	< 0.1	< 0.1	635	13.0	35.0	3.0	12.1	2.2	1.9	0.3	1.5
E837067	0.13	< 0.1	31.1	9.6	< 0.1	38.9	9.2	157	2.2	0.30	< 0.1	1	< 0.1	< 0.1	617	12.6	26.0	2.9	11.1	2.1	1.8	0.2	1.4
E837068	0.11	< 0.1	31.0	12.3	< 0.1	36.8	10.1	20	1.8	0.28	< 0.1	< 1	< 0.1	< 0.1	504	16.7	33.5	3.8	13.7	2.3	2.0	0.3	1.6
E837069	0.13	< 0.1	31.5	11.9	< 0.1	38.0	10.2	52	3.5	0.43	< 0.1	1	0.1	< 0.1	520	12.0	25.0	2.9	11.2	2.3	1.9	0.3	1.7
E837070	0.86	< 0.1	55.3	16.6	4.1	333	15.4	36	< 0.1	0.19	< 0.1	< 1	< 0.1	< 0.1	65	4.2	10.2	1.4	6.8	2.0	2.4	0.4	2.7
E837071	0.13	< 0.1	31.7	10.8	0.1	42.6	10.4	76	3.4	0.35	< 0.1	< 1	< 0.1	< 0.1	565	15.6	33.6	3.8	14.1	2.5	2.1	0.3	1.7
E837072	0.16	< 0.1	32.2	12.1	1.3	39.9	9.1	114	3.8	0.54	< 0.1	1	< 0.1	< 0.1	503	10.3	21.7	2.7	10.4	1.8	1.6	0.2	1.4
E837073	0.12	< 0.1	61.3	12.4	< 0.1	45.4	11.0	106	0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	547	16.0	30.1	3.6	13.5	2.6	2.1	0.3	1.7
E837074	0.11	0.1	34.3	11.8	1.3	24.3	8.0	131	5.0	0.44	< 0.1	1	< 0.1	< 0.1	452	16.3	32.0	3.9	14.6	2.5	2.2	0.2	1.5
E837075	0.14	< 0.1	36.8	15.5	0.8	26.9	7.8	86	1.9	0.21	< 0.1	1	< 0.1	< 0.1	443	11.7	22.9	2.8	11.2	2.0	1.8	0.2	1.6

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837076	0.09	< 0.1	33.6	12.2	0.9	22.5	6.5	103	4.1	0.28	< 0.1	1	0.1	< 0.1	476	9.2	18.2	2.2	8.6	1.4	1.4	0.2	1.2
E837077	0.22	< 0.1	59.9	14.8	2.0	23.9	15.4	260	3.6	0.36	< 0.1	1	< 0.1	< 0.1	312	30.0	64.1	7.0	27.2	4.4	3.7	0.5	3.0
E837078	0.10	< 0.1	29.4	12.9	0.9	18.5	8.1	75	0.4	0.05	< 0.1	< 1	< 0.1	< 0.1	466	12.1	24.5	2.9	11.2	1.9	1.9	0.3	1.6
E837079	0.08	< 0.1	27.0	11.8	0.3	19.3	9.3	87	3.8	0.31	< 0.1	< 1	< 0.1	< 0.1	476	18.5	37.0	4.4	17.6	4.2	2.9	0.4	1.9
E837080	0.03	< 0.1	42.7	11.9	< 0.1	43.6	13.7	16	0.8	0.48	< 0.1	< 1	< 0.1	< 0.1	976	105	194	21.5	78.0	10.2	7.4	0.7	3.3
E837091	0.11	< 0.1	42.3	14.0	0.7	20.2	12.4	92	6.7	0.32	< 0.1	1	0.1	< 0.1	389	21.7	42.9	5.1	19.8	3.2	2.8	0.4	2.4
E837092	0.14	< 0.1	57.2	16.0	0.8	7.4	6.8	350	12.6	0.53	< 0.1	2	0.2	< 0.1	298	11.8	27.9	3.3	12.3	2.6	1.9	0.2	1.6
E837093	0.14	< 0.1	56.6	14.8	0.7	19.4	14.6	238	7.5	0.38	< 0.1	2	0.1	< 0.1	347	15.3	32.3	4.2	17.2	3.1	3.0	0.4	2.8
E837094	0.07	< 0.1	24.3	10.1	0.2	17.4	9.6	89	2.9	0.20	< 0.1	< 1	< 0.1	< 0.1	521	15.5	31.5	3.8	15.0	2.8	2.3	0.3	1.9
E837095	0.08	< 0.1	33.4	10.6	1.2	17.7	8.8	46	2.9	0.29	< 0.1	< 1	< 0.1	< 0.1	530	16.3	38.2	3.7	14.5	2.5	2.1	0.3	1.7
E837096	0.09	< 0.1	30.7	12.0	0.3	20.8	8.1	62	3.9	0.40	< 0.1	< 1	0.1	< 0.1	487	16.0	31.1	3.4	13.3	2.6	1.8	0.2	1.6
E837097	0.09	< 0.1	61.2	12.5	0.7	19.1	8.5	178	10.6	0.24	< 0.1	1	< 0.1	< 0.1	452	14.3	28.1	3.3	12.5	2.2	1.9	0.3	1.7
E837098	0.08	< 0.1	28.8	11.3	0.4	22.0	8.4	109	4.1	0.15	< 0.1	< 1	< 0.1	< 0.1	487	13.2	28.5	3.2	12.9	1.8	1.9	0.2	1.6
E837099	0.09	< 0.1	36.3	11.9	1.3	26.3	7.9	190	5.9	0.26	< 0.1	1	0.1	< 0.1	574	14.5	30.0	3.3	12.7	2.2	1.8	0.2	1.5
E837100	0.03	< 0.1	50.4	11.9	< 0.1	37.1	17.2	282	6.4	0.53	< 0.1	1	< 0.1	< 0.1	1030	102	198	22.6	84.6	13.4	8.6	0.8	4.0
E837111	0.12	< 0.1	49.4	14.8	0.1	29.7	7.2	135	1.1	0.13	< 0.1	< 1	< 0.1	< 0.1	514	9.9	19.2	2.3	8.9	1.8	1.5	0.2	1.4
E837112	0.26	< 0.1	74.7	15.9	2.7	23.2	12.2	249	8.9	0.66	< 0.1	2	0.2	< 0.1	365	28.7	49.1	5.1	18.4	3.1	2.7	0.3	2.2
E837113	0.15	< 0.1	79.5	16.2	1.4	10.2	6.2	336	11.5	0.60	< 0.1	2	0.3	< 0.1	372	10.9	24.1	2.6	9.9	2.1	1.5	0.2	1.4
E837114	0.17	< 0.1	60.2	17.9	0.3	27.9	8.5	190	1.0	0.21	< 0.1	< 1	< 0.1	< 0.1	468	11.8	22.5	2.6	10.3	1.7	1.5	0.2	1.5
E837115	0.20	< 0.1	116	20.3	2.6	34.0	11.6	195	8.2	0.45	< 0.1	2	0.2	< 0.1	363	24.5	45.5	4.8	18.3	3.2	2.9	0.3	2.1
E837116	0.12	0.1	63.6	14.5	1.1	23.6	10.7	142	5.9	0.35	< 0.1	1	0.1	< 0.1	457	20.7	39.1	4.3	16.3	3.5	2.5	0.3	2.0
E837117	0.21	< 0.1	82.2	18.9	2.7	30.5	11.1	142	6.3	0.35	< 0.1	1	0.1	< 0.1	436	18.9	38.3	4.3	16.8	3.4	2.7	0.3	2.2
E837118	0.07	< 0.1	34.2	10.0	1.2	22.6	8.2	151	5.5	0.26	< 0.1	< 1	0.1	< 0.1	511	12.8	25.0	3.0	11.8	2.4	1.9	0.2	1.5
E837119	0.10	< 0.1	48.8	12.5	1.6	24.9	8.9	156	6.7	0.30	< 0.1	1	0.1	< 0.1	463	14.9	29.2	3.5	13.6	2.4	2.1	0.3	1.6
E837120	0.04	< 0.1	42.6	10.4	< 0.1	58.1	16.9	475	10.4	1.09	< 0.1	1	< 0.1	< 0.1	1020	129	244	26.8	99.9	13.5	9.1	0.8	4.0
E837121	0.25	< 0.1	93.1	17.5	2.3	27.7	10.8	176	3.0	0.30	< 0.1	1	< 0.1	< 0.1	395	20.9	40.5	4.4	18.0	2.9	2.6	0.3	2.1
E837122	0.13	< 0.1	39.4	13.2	0.4	25.8	9.3	111	6.3	0.38	< 0.1	1	< 0.1	< 0.1	430	14.3	28.0	3.3	13.4	2.1	2.1	0.3	1.7
E837123	0.11	< 0.1	41.0	13.5	0.8	10.1	4.1	188	7.6	0.37	< 0.1	1	0.2	< 0.1	433	3.6	8.7	1.2	5.1	0.9	1.0	0.1	1.0
E837124	0.10	< 0.1	73.4	12.4	0.1	24.4	8.1	120	4.5	0.24	< 0.1	< 1	< 0.1	< 0.1	447	11.7	22.7	2.7	11.1	2.0	1.5	0.2	1.7
E837125	0.08	< 0.1	36.4	11.7	1.0	19.6	7.6	128	4.4	0.27	< 0.1	< 1	0.1	< 0.1	481	15.2	28.8	3.3	12.7	1.6	1.7	0.2	1.5
E837126	0.16	0.1	88.1	17.5	2.4	26.1	9.5	146	6.6	0.53	< 0.1	2	0.1	< 0.1	396	19.4	36.4	3.8	14.4	2.5	2.2	0.3	1.7
E837127	0.19	< 0.1	77.0	17.2	0.5	23.6	9.7	55	1.8	0.15	< 0.1	< 1	< 0.1	< 0.1	410	22.0	40.7	4.4	16.9	2.5	2.1	0.3	1.8
E837128	0.22	< 0.1	119	22.1	1.1	51.8	9.9	143	1.2	0.17	< 0.1	< 1	< 0.1	< 0.1	422	17.8	32.5	3.6	14.1	2.9	2.3	0.3	1.8
E837129	0.09	< 0.1	41.5	12.3	0.7	23.3	8.5	118	2.3	0.19	< 0.1	< 1	< 0.1	< 0.1	445	28.5	51.2	5.6	19.8	2.8	2.5	0.3	1.8
E837130	1.13	< 0.1	50.5	15.5	3.5	446	12.4	23	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	53	3.9	9.9	1.4	7.0	2.3	2.5	0.5	2.6
E837131	0.10	< 0.1	58.0	13.1	0.6	24.7	8.1	149	6.2	0.31	< 0.1	1	0.1	< 0.1	424	10.2	19.5	2.4	9.6	2.2	1.7	0.2	1.5
E837132	0.13	< 0.1	50.7	15.1	1.2	26.4	10.0	193	6.1	0.34	< 0.1	1	0.1	< 0.1	414	24.6	45.2	5.2	19.6	2.8	2.4	0.3	2.1
E837133	0.30	< 0.1	98.8	18.8	4.5	33.4	14.8	137	3.4	0.22	< 0.1	1	< 0.1	< 0.1	370	44.5	67.2	7.0	25.1	3.3	3.2	0.4	2.7
E837134	0.17	< 0.1	96.0	16.7	2.0	27.9	11.7	177	3.6	0.21	< 0.1	1	< 0.1	< 0.1	375	36.2	63.8	6.7	24.4	3.0	2.8	0.3	2.2
E837135	0.16	< 0.1	47.0	14.3	1.0	25.9	10.6	141	2.1	0.29	< 0.1	< 1	< 0.1	< 0.1	422	16.4	38.1	3.8	14.7	2.8	2.3	0.3	2.0
E837136	0.13	< 0.1	68.1	14.0	1.5	23.4	8.2	73	4.6	0.38	< 0.1	1	0.1	< 0.1	407	12.9	23.4	2.7	10.2	2.0	1.8	0.2	1.5
E837137	0.13	< 0.1	66.2	15.4	1.8	26.0	9.6	103	6.3	0.57	< 0.1	1	0.1	< 0.1	427	10.8	21.8	2.6	10.7	2.3	2.0	0.3	1.7
E837138	0.08	< 0.1	30.0	11.8	0.4	17.1	7.1	18	3.4	0.21	< 0.1	< 1	< 0.1	< 0.1	446	11.3	22.0	2.6	10.2	1.9	1.5	0.2	1.4

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837139	0.09	< 0.1	33.6	12.0	< 0.1	18.3	10.3	51	4.6	0.23	< 0.1	< 1	< 0.1	< 0.1	440	18.6	36.7	4.4	17.3	2.4	2.4	0.3	2.0
E837140	0.04	< 0.1	50.0	11.0	< 0.1	42.6	13.9	96	1.9	0.99	< 0.1	< 1	< 0.1	< 0.1	968	115	212	23.1	81.2	12.0	7.9	0.7	3.4
E837141	0.09	< 0.1	37.5	11.7	0.3	9.7	4.5	176	8.3	0.31	< 0.1	1	0.2	< 0.1	393	8.4	20.1	2.4	9.6	1.7	1.4	0.2	1.2
E837142	0.23	< 0.1	110	20.3	2.6	25.8	9.1	238	4.2	0.60	< 0.1	1	0.1	< 0.1	352	12.0	23.5	2.7	10.9	2.1	1.9	0.3	1.7
E837143	0.15	< 0.1	68.0	15.9	0.7	29.0	8.1	147	0.9	0.11	< 0.1	< 1	< 0.1	< 0.1	405	13.9	25.6	2.9	11.6	1.8	1.8	0.2	1.6
E837144	0.10	0.1	40.1	12.0	1.5	18.4	8.4	41	2.6	0.30	< 0.1	< 1	0.2	0.2	460	14.5	26.1	3.1	12.1	1.9	1.7	0.2	1.6
E837145	0.23	< 0.1	131	21.8	1.3	46.2	16.8	93	6.6	0.90	< 0.1	1	0.2	< 0.1	850	25.8	50.6	6.1	24.1	5.2	3.8	0.5	3.3
E837146	0.09	< 0.1	32.5	11.8	0.9	27.0	9.1	180	5.2	0.21	< 0.1	1	0.1	< 0.1	520	16.4	31.9	3.8	15.0	2.6	2.1	0.3	1.9
E837147	0.13	< 0.1	42.5	13.9	1.1	27.4	9.2	109	6.9	0.34	< 0.1	1	0.1	< 0.1	498	14.0	27.8	3.2	13.0	2.5	2.1	0.3	1.8
E837148	0.13	0.2	56.8	13.8	1.1	28.2	7.4	121	7.5	0.43	< 0.1	1	0.2	< 0.1	420	9.7	19.7	2.4	9.6	2.2	1.7	0.2	1.5
E837149	0.16	0.1	78.8	19.0	2.0	27.6	9.7	231	2.1	0.45	< 0.1	1	< 0.1	< 0.1	388	14.7	27.9	3.3	12.8	2.5	2.1	0.3	1.8
E837150	0.84	< 0.1	63.5	15.0	4.4	243	12.7	33	0.1	0.25	< 0.1	< 1	< 0.1	< 0.1	57	4.1	9.4	1.4	6.7	1.9	2.4	0.4	2.5
E837151	0.10	< 0.1	40.7	12.6	0.9	10.5	4.3	227	8.1	0.43	< 0.1	1	0.2	< 0.1	390	5.3	13.1	1.7	7.4	1.2	1.1	0.2	1.2
E837152	0.08	< 0.1	45.6	12.0	0.3	22.4	7.4	147	6.2	0.27	< 0.1	< 1	0.1	< 0.1	467	13.2	25.4	3.0	11.6	2.0	1.6	0.2	1.4
E837153	0.15	< 0.1	61.5	13.9	1.3	23.5	9.2	242	6.1	0.38	< 0.1	1	0.1	< 0.1	429	14.1	27.8	3.1	11.9	2.6	1.9	0.2	1.6
E837154	0.10	< 0.1	33.0	12.0	3.0	22.3	8.0	180	6.8	0.40	< 0.1	1	0.2	< 0.1	488	11.3	22.3	2.7	11.0	2.0	1.7	0.2	1.5
E837155	0.10	< 0.1	25.8	12.6	0.6	20.3	6.8	135	5.2	0.34	< 0.1	< 1	0.1	< 0.1	515	11.1	21.0	2.5	9.9	1.4	1.4	0.2	1.3
E837156	0.16	< 0.1	84.0	16.4	0.4	23.8	12.2	99	2.3	0.13	< 0.1	< 1	< 0.1	< 0.1	372	18.4	33.5	3.7	14.2	2.4	2.2	0.3	2.2
E837157	0.18	< 0.1	67.6	21.6	1.9	35.1	6.7	77	4.2	0.38	< 0.1	1	< 0.1	< 0.1	409	10.4	19.5	2.3	8.8	1.6	1.4	0.2	1.3
E837158	0.15	< 0.1	76.3	16.6	2.7	32.1	7.7	130	5.5	0.45	< 0.1	1	0.1	< 0.1	464	15.5	30.4	3.0	11.5	2.1	1.7	0.2	1.3
E837159	0.19	< 0.1	71.8	22.1	1.6	36.0	7.2	127	7.7	0.56	< 0.1	2	0.2	< 0.1	424	13.3	25.5	2.9	10.9	2.0	1.7	0.2	1.4
E837160	0.02	< 0.1	49.1	13.3	< 0.1	37.3	7.3	250	5.6	0.72	< 0.1	< 1	< 0.1	< 0.1	871	65.9	126	14.0	51.8	6.8	4.6	0.4	1.9
E837161	0.16	< 0.1	81.4	17.5	1.0	43.6	10.8	216	1.1	0.23	< 0.1	1	< 0.1	< 0.1	390	21.0	41.1	4.5	17.1	2.8	2.2	0.3	2.0
E837162	0.19	0.1	92.4	22.9	4.2	8.0	2.8	219	12.0	1.20	< 0.1	2	0.3	< 0.1	244	2.0	4.7	0.6	2.9	0.9	0.7	0.1	0.7
E837163	0.13	< 0.1	65.6	14.0	0.5	28.1	10.6	226	8.5	0.35	< 0.1	1	0.1	< 0.1	371	18.6	34.6	4.0	15.6	2.8	2.4	0.3	2.0
E837164	0.12	< 0.1	69.6	15.0	0.8	25.9	11.7	233	7.7	0.35	< 0.1	1	0.1	< 0.1	400	21.9	42.5	4.8	20.0	3.2	2.8	0.4	2.1
E837165	0.12	< 0.1	45.8	13.2	0.7	20.7	16.2	272	6.8	0.26	< 0.1	1	0.1	< 0.1	353	27.9	55.0	6.6	25.5	4.8	4.0	0.5	3.1
E837166	0.07	< 0.1	25.6	10.9	3.6	17.8	9.7	177	3.8	0.25	< 0.1	< 1	< 0.1	< 0.1	434	17.5	35.8	4.3	16.6	3.4	2.4	0.3	1.8
E837167	0.07	< 0.1	28.2	10.6	< 0.1	18.7	8.5	62	3.0	0.19	< 0.1	< 1	< 0.1	< 0.1	492	16.5	31.8	3.8	15.0	2.1	2.2	0.2	1.7
E837168	0.05	< 0.1	21.3	10.1	0.5	17.3	7.9	45	2.5	0.27	< 0.1	< 1	< 0.1	< 0.1	484	14.6	29.0	3.5	13.9	2.7	2.0	0.2	1.5
E837169	0.10	< 0.1	29.8	11.2	0.6	26.3	9.1	154	3.7	0.17	< 0.1	< 1	< 0.1	< 0.1	535	16.5	33.1	4.0	16.3	2.9	2.2	0.3	1.8
E837170	0.76	< 0.1	50.0	14.0	4.4	239	11.9	37	0.1	0.69	< 0.1	< 1	0.2	< 0.1	51	3.7	8.6	1.3	6.3	1.9	2.2	0.3	2.2
E837171	0.09	< 0.1	27.7	11.3	0.5	21.1	9.6	265	4.8	0.25	< 0.1	1	0.1	< 0.1	553	15.2	30.3	3.6	13.9	2.7	2.2	0.3	1.8
E837172	0.17	< 0.1	63.6	14.7	2.0	33.2	10.1	113	1.0	0.06	< 0.1	< 1	< 0.1	< 0.1	609	21.4	51.7	4.7	17.5	3.1	2.5	0.3	1.9
E837173	0.13	< 0.1	51.7	11.8	6.6	27.8	8.5	135	0.8	0.09	< 0.1	< 1	< 0.1	< 0.1	565	15.2	30.1	3.5	13.1	2.2	1.9	0.3	1.6
E837174	0.12	< 0.1	68.0	12.6	0.3	31.0	9.1	49	0.6	< 0.05	< 0.1	< 1	< 0.1	< 0.1	557	17.0	33.1	3.8	14.7	3.1	2.1	0.3	1.7
E837175	0.07	< 0.1	24.5	11.0	< 0.1	19.2	9.6	156	4.5	0.19	< 0.1	< 1	0.1	< 0.1	520	15.9	31.5	3.8	15.0	2.6	2.2	0.3	1.7
E837176	0.09	< 0.1	28.7	11.9	0.9	23.7	10.5	192	4.5	0.20	< 0.1	1	< 0.1	< 0.1	507	15.6	31.2	3.8	15.5	3.1	2.3	0.3	2.2
E837177	0.07	< 0.1	26.4	11.4	0.9	20.2	8.9	168	3.4	0.13	< 0.1	< 1	< 0.1	< 0.1	502	13.2	26.7	3.3	12.8	2.3	1.9	0.3	1.8
E837178	0.18	< 0.1	73.1	18.7	2.0	23.7	16.1	231	10.0	0.79	< 0.1	2	0.2	< 0.1	319	31.3	61.0	7.3	28.4	5.2	4.2	0.5	3.2
E837179	0.23	0.1	84.7	17.9	5.2	11.8	3.7	123	10.6	0.85	< 0.1	2	0.2	< 0.1	332	3.2	7.6	0.9	3.7	0.7	0.9	0.1	0.8
E837180	0.03	< 0.1	46.1	13.1	< 0.1	46.8	14.2	394	6.8	0.49	< 0.1	3	0.1	< 0.1	946	118	224	24.4	89.6	12.9	7.6	0.7	3.6
E837181	0.09	< 0.1	24.7	11.3	1.2	24.2	6.7	180	5.5	0.33	< 0.1	< 1	0.1	< 0.1	517	11.6	21.4	2.7	9.9	1.9	1.4	0.2	1.3

Results

Activation Laboratories Ltd.

Report: A17-10380

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837182	0.22	< 0.1	80.5	17.5	2.5	29.2	11.4	141	7.1	0.45	< 0.1	1	0.1	< 0.1	358	22.3	40.8	4.6	17.1	3.0	2.5	0.3	2.1
E837183	0.14	< 0.1	49.6	15.1	1.6	18.7	9.4	131	5.5	0.41	< 0.1	1	0.1	< 0.1	406	33.1	59.1	6.4	21.8	3.9	2.8	0.3	1.7
E837184	0.19	< 0.1	93.8	19.8	4.0	28.9	8.3	187	4.4	0.38	< 0.1	1	0.1	< 0.1	384	13.4	24.5	2.7	10.2	1.7	1.5	0.2	1.5
E837185	0.10	< 0.1	32.6	13.4	0.8	18.4	7.2	162	4.0	0.73	< 0.1	1	< 0.1	< 0.1	449	10.5	20.5	2.5	9.7	1.8	1.5	0.2	1.3
E837186	0.11	< 0.1	21.2	10.4	< 0.1	23.3	10.2	200	4.1	0.15	< 0.1	1	< 0.1	0.1	449	19.8	37.9	4.6	17.2	3.3	2.5	0.3	2.0
E837187	0.09	< 0.1	25.4	12.2	1.1	31.0	6.2	145	6.6	0.44	< 0.1	1	0.1	< 0.1	493	10.4	19.6	2.3	9.4	1.7	1.4	0.2	1.3
E837188	0.14	0.5	78.8	16.5	3.0	41.9	9.4	203	10.4	0.63	< 0.1	2	0.2	< 0.1	360	15.4	29.5	3.2	12.2	3.0	2.0	0.3	1.9
E837189	0.20	< 0.1	86.6	17.5	3.0	36.0	12.7	167	10.2	0.85	< 0.1	2	0.2	< 0.1	340	31.2	57.6	6.5	25.0	3.5	3.2	0.4	2.4
E837190	0.98	< 0.1	50.5	14.1	7.0	181	6.7	52	2.7	4.88	< 0.1	1	2.4	< 0.1	54	2.1	5.1	0.8	4.3	1.4	1.6	0.2	1.7
E837101	0.10	< 0.1	37.5	11.9	1.8	10.7	3.5	203	8.1	0.46	< 0.1	1	0.2	< 0.1	413	5.3	11.9	1.6	6.4	1.2	1.0	0.1	0.9
E837102	0.10	< 0.1	55.5	13.1	0.3	29.4	7.8	159	4.7	0.37	< 0.1	1	0.1	< 0.1	456	10.1	19.5	2.5	10.1	1.9	1.7	0.2	1.5
E837103	0.20	0.1	122	16.7	3.4	34.7	13.2	183	7.6	0.49	< 0.1	2	0.1	< 0.1	369	21.5	41.9	4.6	17.6	3.5	2.9	0.4	2.4
E837104	0.13	< 0.1	39.7	15.2	1.0	31.3	9.2	126	5.0	0.56	< 0.1	1	0.1	< 0.1	440	12.2	24.5	3.1	12.1	2.6	2.1	0.3	1.8
E837105	0.11	< 0.1	34.2	16.1	0.2	27.7	8.2	112	1.0	0.14	< 0.1	< 1	< 0.1	< 0.1	477	10.5	21.0	2.6	10.9	1.6	1.8	0.2	1.6
E837106	0.29	< 0.1	89.6	25.0	3.9	52.3	8.7	132	2.4	0.46	< 0.1	2	< 0.1	< 0.1	389	11.6	23.0	2.6	10.4	1.6	1.8	0.3	1.5
E837107	0.29	< 0.1	97.7	24.0	3.2	44.5	9.5	117	1.3	0.15	< 0.1	< 1	< 0.1	< 0.1	371	12.8	24.9	2.8	10.7	2.6	1.8	0.2	1.7
E837108	0.11	< 0.1	33.3	14.9	1.0	25.3	7.5	59	4.7	0.45	< 0.1	1	0.1	< 0.1	455	12.5	23.5	3.1	11.9	1.8	1.9	0.3	1.5
E837109	0.13	< 0.1	33.3	13.4	0.9	31.7	8.1	167	5.6	0.44	< 0.1	1	0.1	< 0.1	504	12.6	24.4	2.9	11.4	2.4	1.8	0.2	1.6
E837110	0.94	< 0.1	50.5	14.4	4.4	210	12.4	48	0.3	1.70	< 0.1	< 1	0.3	< 0.1	52	3.8	8.9	1.3	6.5	1.8	2.3	0.4	2.7
EA32241	0.25	0.3	57.4	10.2	4.6	26.7	13.1	117	5.0	0.57	< 0.1	1	0.2	< 0.1	262	44.9	85.2	9.0	32.8	5.1	4.0	0.5	2.8
GXR-1 Meas	1340	16.1	760	8.7	453	2.8	28.0	5	0.5	18.4	0.8	30	32.8	9.1	606	7.3	15.1		9.0	3.2	4.1	0.8	4.4
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1280	14.7	797	7.4	423	2.8	33.0	18	0.7	17.9	0.7	29	39.6	9.1	726	7.6	15.4		8.6	2.7	4.0	0.7	4.6
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1300	16.5	846	< 0.1	445	2.8	34.3	25	1.4	20.6	0.8	39	120	13.6	726	7.7	15.3		8.5	2.8	3.8	0.7	4.6
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	18.0	5.4	63.7	18.2	101	143	13.2	43	10.6	338	0.2	8	5.0	0.9	75	57.0	114		44.3	7.8	4.7	0.6	2.9
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
GXR-4 Meas	17.1	5.5	72.9	17.6	98.3	127	15.4	42	9.9	314	0.2	7	5.3	0.9	104	58.3	110		42.9	6.5	4.6	0.5	2.9
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
GXR-4 Meas	17.1	5.6	76.2	22.3	103	107	14.8	48	10.7	331	0.2	8	4.9	0.9	125	59.0	110		42.5	7.2	4.7	0.5	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			94.9	21.1	< 0.1	102		47	< 0.1			< 1	< 0.1		596	40.3	92.6		42.4	8.4	7.0	1.1	6.0
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			110	18.3	< 0.1	66.4		45	0.2			< 1	< 0.1		664	39.5	87.5		39.3	8.0	6.7	1.0	6.0
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			112	14.1	< 0.1	85.0		59	0.1			< 1	< 0.1		637	32.7	81.9		34.5	6.9	6.0	0.9	5.6

## Results

## Activation Laboratories Ltd.

## Report: A17-10380

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.18	< 0.1	124	27.3	237	79.1	12.1	69	0.1	0.22	< 0.1	< 1	0.3	< 0.1	1160	12.3	35.5		12.7	3.0	2.4	0.4	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.21	0.4	143	20.9	263	46.8	14.2	79	0.2	0.48	< 0.1	< 1	0.2	< 0.1	1350	12.4	35.7		12.9	2.8	2.4	0.3	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.22	0.6	146	7.3	309	57.8	12.0	111	0.7	1.06	< 0.1	1	0.3	< 0.1	1240	9.5	28.4		11.0	2.3	2.1	0.3	2.2
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			58.9	13.7		3.0	14.8	38	1.5				0.7		91	3.4			5.0				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			65.4	13.5		3.2	18.4	39	1.1				0.3		110	3.6			4.9				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			72.6	16.7		3.4	19.1	40	1.6				0.7		112	3.8			5.1				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.65		180	25.5	20.1	134	30.1	123	8.8	3.48		3	3.2		548	50.2	112	12.2	51.9	9.0	7.9	1.2	6.6
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.67		201	23.9	24.7	111	36.7	129	14.0	2.13		4	1.1		603	51.8	109	12.8	49.6	10.6	8.0	1.1	6.5
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.73		212	21.2	23.0	126	36.8	123	13.3	2.41		4	1.1		627	52.3	110	12.9	51.2	10.1	8.4	1.1	6.8
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.33		41.6	22.5	4.6	40.7	11.0	109	< 0.1	0.30	0.1	< 1	< 0.1		180	16.9	38.8	3.8	15.7	2.6	2.7	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.34		42.3	22.1	5.5	39.4	10.2	86	0.2	0.45	0.1	< 1	< 0.1		170	16.2	36.2	3.6	14.9	2.8	2.4	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.33		43.3	19.3	4.3	34.1	10.6	53	0.6	0.37	< 0.1	< 1	< 0.1		179	16.1	33.4	3.7	14.1	3.0	2.4	0.4	2.1
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.33		44.5	21.1	6.0	36.8	12.8	79	0.3	0.48	< 0.1	< 1	< 0.1		193	16.5	36.3	3.9	14.4	2.5	2.3	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.32		45.5	25.3	6.9	32.2	11.1	150	5.3	0.98	< 0.1	< 1	0.1		182	13.7	30.3	3.3	12.7	2.2	2.0	0.3	2.1
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	1.00		800	16.9		88.4	25.5	32	2.1	12.1					973	46.6	106	10.5	42.7	7.4	5.8	0.9	5.0
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	1.00		783	17.5		109	25.4	114	5.5	12.4					979	47.0	107	10.7	42.8	6.0	5.9	0.9	5.1
SdAR-M2	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(U.S.G.S.) Cert																							
SdAR-M2 (U.S.G.S.) Meas	1.01		814	14.2		55.2	25.0	104	13.8	12.3					1010	46.8	96.2	10.7	39.9	7.2	5.5	0.7	4.8
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	0.97		864	11.9		71.0	30.1	78	4.5	11.5					1100	45.8	99.4	10.7	40.0	7.0	5.7	0.8	4.9
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	1.00		847	< 0.1		98.6	24.9	129	6.2	12.3					1030	35.3	82.1	8.3	30.6	5.9	4.4	0.6	4.2
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 223 (Fire Assay) Meas																							
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835491 Dup	0.11	< 0.1	36.8	15.3	< 0.1	64.8	10.4	184	0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	516	19.3	39.0	4.2	15.8	2.6	2.3	0.3	1.7
E835495 Orig																							
E835495 Dup																							
E835205 Orig																							
E835205 Dup																							
E835215 Orig																							
E835215 Dup																							
E835227 Orig	0.14	< 0.1	64.3	14.1	< 0.1	37.5	19.1	157	0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	392	17.7	42.4	5.4	22.3	4.7	3.9	0.5	3.2
E835227 Dup	0.13	< 0.1	66.5	14.8	< 0.1	39.2	19.1	149	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	401	15.6	37.2	4.7	20.0	3.9	3.5	0.5	3.1
E835232 Orig	0.21	< 0.1	90.1	17.3	0.4	84.2	18.5	125	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	449	19.4	42.1	5.2	21.9	4.4	3.9	0.5	3.2
E835232 Dup	0.22	< 0.1	89.4	17.5	< 0.1	85.2	19.2	189	0.2	0.11	< 0.1	< 1	< 0.1	< 0.1	459	27.0	60.3	7.6	30.3	5.4	4.4	0.6	3.3
E835240 Orig																							
E835240 Dup																							
E835263 Orig	0.15	< 0.1	48.5	11.5	12.8	60.8	12.5	176	1.1	0.28	< 0.1	1	< 0.1	< 0.1	529	18.7	41.4	4.4	16.6	2.9	2.6	0.3	2.0
E835263 Dup	0.17	< 0.1	47.8	11.3	12.5	61.3	12.4	179	0.3	0.24	< 0.1	< 1	< 0.1	< 0.1	535	17.4	39.9	4.2	16.1	2.7	2.5	0.3	2.1
E835271 Orig																							
E835271 Dup																							
E835272 Orig																							
E835272 Dup																							
E835273 Orig	0.30	< 0.1	89.8	14.0	10.3	52.7	15.8	123	0.3	0.17	< 0.1	< 1	< 0.1	< 0.1	332	33.5	61.7	5.8	20.9	3.3	3.1	0.4	2.7
E835273 Dup	0.37	< 0.1	90.7	14.3	9.7	54.1	14.6	120	0.3	0.29	< 0.1	< 1	< 0.1	< 0.1	323	33.1	60.7	5.4	20.0	3.4	2.8	0.4	2.4
E835275 Orig	0.21	0.1	58.1	16.2	6.4	36.0	5.0	134	9.8	0.56	< 0.1	2	0.3	< 0.1	463	3.8	8.6	1.1	4.2	0.8	0.9	0.2	1.0
E835275 Dup	0.23	< 0.1	58.4	14.6	5.5	62.5	9.1	126	7.4	0.49	< 0.1	2	0.2	< 0.1	495	11.0	22.5	2.5	9.3	1.8	1.8	0.3	1.6
E835285 Orig																							
E835285 Dup																							
E835300 Orig																							
E835300 Dup																							
E835302 Orig	0.23	< 0.1	73.1	10.8	27.2	23.9	10.6	216	8.9	0.44	< 0.1	2	0.4	< 0.1	385	10.0	23.1	2.8	11.5	2.4	2.1	0.3	2.0
E835302 Dup	0.25	< 0.1	74.7	11.2	25.6	22.6	11.1	251	9.3	0.64	< 0.1	2	0.4	< 0.1	385	9.7	21.8	2.7	10.4	2.4	2.1	0.3	2.2
E835311 Orig																							
E835311 Dup																							
E835320 Orig																							
E835320 Dup																							
E835327 Orig	0.28	0.2	93.1	15.0	15.4	46.8	9.6	151	1.2	0.99	< 0.1	1	< 0.1	< 0.1	391	12.5	26.2	2.9	10.8	2.2	1.8	0.3	1.7
E835327 Dup	0.29	< 0.1	90.0	15.5	17.7	59.2	10.3	146	0.4	0.64	< 0.1	1	< 0.1	< 0.1	347	9.7	20.5	2.2	8.9	1.7	1.7	0.3	1.6
E835335 Orig																							
E835335 Dup																							
E835345 Orig	0.19	< 0.1	40.8	9.9	13.5	45.0	8.4	141	5.1	0.73	< 0.1	1	< 0.1	< 0.1	479	10.6	20.5	2.3	8.7	1.7	1.5	0.2	1.4
E835345 Dup	0.19	< 0.1	40.7	8.3	13.8	46.5	9.1	159	3.5	0.44	< 0.1	1	< 0.1	< 0.1	495	12.7	24.3	2.7	10.1	1.7	1.7	0.2	1.5
E832160 Orig																							
E832160 Dup																							
E832163 Orig																							
E832163 Dup																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832170 Orig	0.83	< 0.1	53.2	18.0	7.3	285	5.8	55	3.0	5.11	< 0.1	2	2.8	< 0.1	52	1.5	3.7	0.7	3.4	0.9	1.2	0.2	1.5
E832170 Dup	0.77	< 0.1	54.4	18.5	5.3	581	15.1	55	< 0.1	1.50	< 0.1	< 1	< 0.1	< 0.1	61	4.3	10.4	1.4	6.9	2.0	2.5	0.4	2.7
E832175 Orig																							
E832175 Dup																							
E832185 Orig																							
E832185 Dup																							
E832195 Orig																							
E832195 Dup																							
E832197 Orig	0.19	< 0.1	35.4	9.4	< 0.1	16.5	8.1	108	0.4	0.20	< 0.1	< 1	< 0.1	< 0.1	603	5.0	8.8	1.1	4.2	0.8	0.9	0.1	1.1
E832197 Dup	0.21	< 0.1	37.1	9.4	< 0.1	18.1	9.1	97	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	630	5.5	9.7	1.2	4.5	1.1	1.0	0.2	1.2
E832244 Orig	0.07	2.3	5.8	< 0.1	4.7	3.3	17.4	4	0.5	0.71	< 0.1	< 1	1.4	< 0.1	126	32.9	25.7	7.1	25.8	3.7	2.8	0.4	2.2
E832244 Dup	0.09	2.5	6.5	< 0.1	4.3	3.2	17.1	7	0.7	0.72	< 0.1	< 1	1.4	< 0.1	125	33.1	25.8	7.0	25.8	3.7	3.0	0.4	2.3
E832254 Orig																							
E832254 Dup																							
E832264 Orig																							
E832264 Dup																							
E837057 Orig																							
E837057 Dup																							
E837067 Orig	0.13	< 0.1	31.1	9.6	< 0.1	38.9	9.2	157	2.2	0.30	< 0.1	1	< 0.1	< 0.1	617	12.6	26.0	2.9	11.1	2.1	1.8	0.2	1.4
E837067 Dup	0.11	< 0.1	31.4	10.2	< 0.1	38.3	9.6	18	1.3	0.30	< 0.1	< 1	< 0.1	< 0.1	601	15.5	31.5	3.5	13.0	2.6	2.0	0.3	1.5
E837072 Orig																							
E837072 Dup																							
E837073 Orig	0.12	< 0.1	61.3	12.4	< 0.1	45.4	11.0	106	0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	547	16.0	30.1	3.6	13.5	2.6	2.1	0.3	1.7
E837073 Dup	0.13	< 0.1	60.3	12.4	0.1	46.9	10.6	133	0.2	0.07	< 0.1	< 1	< 0.1	< 0.1	541	15.7	29.2	3.4	12.8	1.8	2.0	0.3	1.6
E837074 Orig	0.11	0.1	34.3	11.8	1.3	24.3	8.0	131	5.0	0.44	< 0.1	1	< 0.1	< 0.1	452	16.3	32.0	3.9	14.6	2.5	2.2	0.2	1.5
E837074 Dup	0.11	< 0.1	36.3	12.7	2.3	25.2	7.7	124	5.6	0.39	< 0.1	1	< 0.1	< 0.1	447	11.9	23.8	2.8	11.3	1.8	1.7	0.2	1.5
E837092 Orig																							
E837092 Dup																							
E837112 Orig																							
E837112 Dup																							
E837130 Orig	1.13	< 0.1	50.5	15.5	3.5	446	12.4	23	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	53	3.9	9.9	1.4	7.0	2.3	2.5	0.5	2.6
E837130 Dup	0.77	< 0.1	48.1	15.3	8.4	383	10.1	60	0.5	3.40	< 0.1	< 1	0.1	< 0.1	43	2.9	7.1	1.0	5.4	1.8	2.1	0.4	2.2
E837132 Orig	0.13	< 0.1	50.7	15.1	1.2	26.4	10.0	193	6.1	0.34	< 0.1	1	0.1	< 0.1	414	24.6	45.2	5.2	19.6	2.8	2.4	0.3	2.1
E837132 Dup	0.13	< 0.1	49.2	14.7	1.6	20.2	9.3	97	5.3	0.41	< 0.1	1	0.1	< 0.1	422	16.9	30.0	3.5	13.3	2.5	2.1	0.3	1.8
E837134 Orig	0.17	< 0.1	96.0	16.7	2.0	27.9	11.7	177	3.6	0.21	< 0.1	1	< 0.1	< 0.1	375	36.2	63.8	6.7	24.4	3.0	2.8	0.3	2.2
E837134 Dup	0.19	< 0.1	94.3	16.7	2.6	32.1	11.1	155	7.7	0.42	< 0.1	1	0.2	< 0.1	371	34.0	57.9	5.8	20.8	3.4	2.5	0.3	2.0
E837137 Orig																							
E837137 Dup																							
E837147 Orig																							
E837147 Dup																							
E837162 Orig																							
E837162 Dup																							
E837170 Orig	0.76	< 0.1	50.0	14.0	4.4	239	11.9	37	0.1	0.69	< 0.1	< 1	0.2	< 0.1	51	3.7	8.6	1.3	6.3	1.9	2.2	0.3	2.2



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank	< 0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835451	7.1	< 0.1	0.2	1.1	0.2	< 0.1	280	< 0.1	< 0.001	0.26	12.6	5.2	1.0
E835452	26.9	< 0.1	0.2	1.0	0.1	< 0.1	233	0.1	< 0.001	0.32	14.6	8.1	1.2
E835453	13.7	< 0.1	0.1	0.9	0.1	< 0.1	251	< 0.1	< 0.001	0.30	14.0	4.9	1.1
E835454	8.5	< 0.1	0.1	0.9	0.1	< 0.1	259	< 0.1	0.001	0.34	13.8	4.3	2.9
E835455	34.4	< 0.1	0.2	1.0	0.1	< 0.1	224	0.1	< 0.001	0.35	19.7	9.4	1.4
E835456	18.8	< 0.1	0.2	1.1	0.2	< 0.1	234	< 0.1	< 0.001	0.41	15.6	7.6	1.4
E835457	73.2	< 0.1	0.3	2.0	0.3	< 0.1	206	< 0.1	0.001	0.68	20.5	14.2	2.2
E835458	14.4	< 0.1	0.1	0.8	0.1	< 0.1	263	0.1	< 0.001	0.31	15.4	4.0	1.0
E835459	9.9	< 0.1	0.1	0.7	0.1	0.3	253	0.3	< 0.001	0.32	15.1	2.9	0.7
E835460	5.8	< 0.1	0.1	0.6	0.1	< 0.1	236	2.2	< 0.001	0.83	41.2	60.1	4.2
E835461	5.8	< 0.1	0.1	0.9	0.2	< 0.1	249	< 0.1	< 0.001	0.35	19.3	5.6	1.2
E835462	14.1	0.1	0.1	0.9	0.1	< 0.1	268	< 0.1	< 0.001	0.30	16.4	3.8	1.1
E835463	33.2	< 0.1	0.2	1.3	0.2	< 0.1	221	< 0.1	< 0.001	0.30	15.2	4.4	1.0
E835464	7.8	0.1	0.1	1.0	0.1	< 0.1	265	< 0.1	< 0.001	0.33	15.3	4.7	1.2
E835465	4.4	< 0.1	0.1	0.8	0.1	< 0.1	278	0.2	< 0.001	0.30	13.4	3.6	0.8
E835466	2.8	< 0.1	0.2	1.0	0.1	< 0.1	278	0.1	< 0.001	0.29	13.2	8.9	1.1
E835467	8.9	< 0.1	0.2	1.1	0.2	< 0.1	262	< 0.1	< 0.001	0.42	15.6	7.7	1.1
E835468	13.8	< 0.1	0.2	1.1	0.2	< 0.1	264	0.1	< 0.001	0.34	12.5	6.2	1.0
E835469	2.2	< 0.1	0.2	1.1	0.2	< 0.1	286	0.1	< 0.001	0.29	12.9	4.8	1.1
E835470	33.0	0.1	0.2	1.1	0.2	< 0.1	79.6	< 0.1	< 0.001	5.77	8.8	0.5	0.1
E835471	10.1	< 0.1	0.2	1.3	0.2	< 0.1	245	1.1	0.001	0.46	15.3	9.2	1.3
E835472	12.9	< 0.1	0.2	1.3	0.2	< 0.1	254	< 0.1	< 0.001	0.42	15.1	7.7	1.1
E835473	3.8	< 0.1	0.1	0.9	0.1	< 0.1	258	< 0.1	< 0.001	0.34	14.1	7.3	1.1
E835474	16.0	< 0.1	0.2	1.2	0.2	< 0.1	201	< 0.1	0.001	0.64	18.1	9.6	1.5
E835475	4.3	0.2	0.2	1.0	0.2	< 0.1	261	< 0.1	0.001	0.33	14.1	5.5	1.0
E835476	6.4	0.1	0.2	1.5	0.2	< 0.1	247	< 0.1	< 0.001	0.28	17.8	14.0	1.7
E835477	6.5	< 0.1	0.2	1.0	0.1	< 0.1	264	< 0.1	< 0.001	0.26	12.6	6.2	0.9

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835478	2.8	0.2	0.1	0.9	0.2	< 0.1	271	< 0.1	< 0.001	0.27	13.8	4.6	0.9
E835479	8.9	< 0.1	0.1	1.0	0.1	< 0.1	236	0.1	0.001	0.29	15.4	6.1	1.2
E835480	7.2	< 0.1	< 0.1	0.2	< 0.1	0.2	105	0.9	< 0.001	0.87	33.5	13.3	1.3
E835481	11.3	< 0.1	0.2	1.0	0.2	< 0.1	264	< 0.1	< 0.001	0.28	16.1	5.0	1.0
E835482	6.6	< 0.1	0.1	1.0	0.2	< 0.1	267	0.1	< 0.001	0.31	16.4	4.1	1.0
E835483	14.3	< 0.1	0.2	1.0	0.1	0.2	225	0.4	< 0.001	0.38	24.8	9.9	1.6
E835484	11.3	< 0.1	0.2	1.1	0.2	< 0.1	253	0.1	< 0.001	0.32	17.2	7.9	1.3
E835485	21.4	0.3	0.2	1.3	0.2	< 0.1	181	< 0.1	< 0.001	0.41	18.7	13.7	1.3
E835486	12.9	0.1	0.1	1.0	0.2	< 0.1	222	0.2	0.001	0.29	17.2	7.3	1.3
E835487	3.7	0.3	0.1	1.0	0.1	< 0.1	271	0.1	< 0.001	0.28	13.2	5.5	0.9
E835488	5.8	0.2	0.2	1.0	0.2	0.3	265	0.2	0.001	0.29	13.5	4.4	0.8
E835489	9.8	0.4	0.2	1.0	0.1	< 0.1	232	0.1	< 0.001	0.49	16.4	6.7	1.2
E835490	33.5	0.1	0.2	1.3	0.2	< 0.1	90.9	< 0.1	< 0.001	5.79	8.7	0.7	0.2
E835491	4.6	< 0.1	0.1	1.0	0.2	< 0.1	244	< 0.1	< 0.001	0.31	17.2	7.5	1.2
E835492	5.3	0.2	0.1	0.9	0.1	< 0.1	240	< 0.1	< 0.001	0.31	14.9	7.8	1.1
E835493	11.4	0.2	0.1	1.0	0.1	< 0.1	223	< 0.1	0.001	0.37	16.7	10.5	1.4
E835494	2.6	0.3	0.1	0.9	0.1	< 0.1	225	< 0.1	< 0.001	0.27	13.6	5.6	0.9
E835495	7.3	0.3	0.2	1.0	0.2	0.2	262	0.1	< 0.001	0.34	16.0	6.3	1.1
E835496	4.3	0.5	0.1	0.7	0.1	0.2	272	0.3	< 0.001	0.26	13.6	3.4	4.0
E835497	8.9	< 0.1	0.1	0.7	0.1	0.1	273	0.2	< 0.001	0.26	13.2	4.8	0.7
E835498	4.3	0.1	0.1	0.8	0.1	0.5	286	0.4	< 0.001	0.28	13.0	4.1	0.7
E835499	4.0	< 0.1	0.1	0.8	0.1	< 0.1	278	0.3	< 0.001	0.30	16.1	3.3	0.9
E835500	9.5	< 0.1	0.1	0.7	0.1	< 0.1	276	1.8	< 0.001	0.85	29.6	35.6	1.4
E835201	95.4	< 0.1	0.2	1.5	0.2	< 0.1	223	0.2	0.001	0.60	13.1	9.3	2.5
E835202	114	< 0.1	0.2	1.0	0.2	< 0.1	59.1	0.2	0.006	0.12	1.5	5.8	3.6
E835203	26.1	< 0.1	0.1	0.7	0.1	< 0.1	103	< 0.1	< 0.001	0.11	6.8	4.8	2.2
E835204	1320	< 0.1	2.2	13.5	2.3	< 0.1	50.2	0.8	0.014	0.33	6.3	13.0	26.1
E835205	15.8	< 0.1	0.2	1.0	0.1	0.4	217	0.7	0.001	0.30	11.5	5.9	1.5
E835206	8.5	< 0.1	0.1	0.8	0.1	< 0.1	187	0.3	0.001	0.23	9.2	4.9	2.1
E835207	17.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	56.0	0.1	0.001	< 0.05	1.1	0.8	1.0
E835208	35.9	0.2	0.1	0.8	0.1	0.1	107	0.4	< 0.001	0.28	8.5	6.4	2.9
E835209	457	< 0.1	0.6	3.9	0.6	< 0.1	65.3	0.6	0.005	0.40	7.3	23.0	10.3
E835210	37.6	< 0.1	0.2	1.2	0.2	< 0.1	89.8	< 0.1	< 0.001	5.77	8.8	0.7	0.2
E835211	104	< 0.1	0.2	1.3	0.2	< 0.1	62.7	0.3	0.003	0.16	2.4	13.5	10.7
E835212	645	< 0.1	0.7	4.4	0.8	< 0.1	78.8	0.9	0.003	0.35	9.1	10.7	5.5
E835213	10.9	< 0.1	0.1	0.8	0.1	< 0.1	177	0.3	0.001	0.30	9.9	5.2	1.3
E835214	20.6	< 0.1	0.1	0.7	0.1	< 0.1	84.5	0.4	0.001	0.22	6.4	4.6	1.6
E835215	542	< 0.1	0.8	5.8	1.0	< 0.1	44.6	0.4	0.001	0.82	2.2	10.8	9.3
E835216	33.0	< 0.1	0.3	1.8	0.3	< 0.1	203	< 0.1	< 0.001	0.74	21.5	16.4	2.8
E835217	19.8	< 0.1	0.2	1.4	0.2	< 0.1	208	< 0.1	< 0.001	0.52	16.3	11.2	1.5
E835218	60.4	< 0.1	< 0.1	0.3	< 0.1	< 0.1	80.1	0.1	0.002	0.08	3.7	1.7	1.1
E835219	13.7	< 0.1	0.2	1.0	0.1	0.6	191	0.7	< 0.001	0.43	14.7	3.8	0.9
E835220	16.2	< 0.1	0.2	1.1	0.2	< 0.1	210	1.5	< 0.001	0.97	42.7	79.5	4.6



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835221	186	0.3	0.3	2.2	0.3	< 0.1	64.1	0.7	< 0.001	0.31	7.6	1.5	1.0
E835222	4.3	< 0.1	0.2	1.2	0.2	< 0.1	271	< 0.1	< 0.001	0.27	13.4	11.5	1.0
E835223	27.8	< 0.1	0.2	1.3	0.2	< 0.1	184	< 0.1	< 0.001	0.38	15.9	7.5	1.3
E835224	3.5	< 0.1	0.1	0.7	0.1	< 0.1	261	0.1	< 0.001	0.28	12.5	3.9	0.8
E835225	8.8	< 0.1	0.1	0.8	0.1	< 0.1	279	0.1	< 0.001	0.28	14.7	3.0	0.8
E835226	8.9	0.1	0.2	1.0	0.2	< 0.1	239	< 0.1	< 0.001	0.32	15.4	7.5	1.1
E835227	5.4	< 0.1	0.3	1.7	0.3	< 0.1	235	< 0.1	< 0.001	0.23	15.9	8.8	1.4
E835228	6.0	< 0.1	0.3	1.9	0.3	< 0.1	274	< 0.1	< 0.001	0.23	15.9	20.2	1.9
E835229	7.3	< 0.1	0.3	1.8	0.3	< 0.1	257	< 0.1	0.001	0.35	13.3	15.8	8.2
E835230	46.5	0.1	0.2	1.2	0.2	< 0.1	90.8	< 0.1	0.001	5.79	8.7	0.7	0.2
E835231	17.9	< 0.1	0.1	0.9	0.1	< 0.1	208	< 0.1	0.003	0.50	21.9	10.1	1.4
E835232	13.6	< 0.1	0.2	1.5	0.2	< 0.1	350	< 0.1	< 0.001	0.37	16.2	8.2	1.3
E835233	14.6	0.1	0.2	1.1	0.2	< 0.1	276	0.1	< 0.001	0.41	13.6	10.2	1.3
E835234	3.8	0.1	0.1	0.9	0.1	< 0.1	251	< 0.1	< 0.001	0.25	12.7	3.4	0.8
E835235	5.4	< 0.1	0.2	1.1	0.2	< 0.1	255	< 0.1	0.002	0.25	13.0	5.7	1.3
E835236	1.8	< 0.1	0.1	0.9	0.2	0.3	247	0.3	< 0.001	0.27	11.7	2.3	0.6
E835237	35.4	< 0.1	0.1	0.8	0.1	< 0.1	280	0.2	< 0.001	0.25	12.6	3.6	0.8
E835238	2.1	< 0.1	0.1	0.9	0.1	< 0.1	259	0.2	< 0.001	0.24	13.2	4.6	0.9
E835239	3.6	< 0.1	0.1	0.8	0.1	0.1	265	0.4	< 0.001	0.28	15.7	6.2	0.8
E835240	41.0	< 0.1	0.2	1.0	0.1	0.2	195	25.4	0.003	0.96	43.3	63.3	3.9
E835241	4.9	< 0.1	0.1	0.8	0.1	< 0.1	259	0.2	< 0.001	0.29	13.8	5.7	1.1
E835242	20.0	< 0.1	0.2	1.1	0.2	< 0.1	262	0.2	< 0.001	0.24	13.4	7.0	1.1
E835243	26.4	0.2	0.2	1.2	0.2	< 0.1	263	< 0.1	< 0.001	0.22	13.0	7.2	1.1
E835244	4.1	< 0.1	0.1	1.0	0.2	< 0.1	254	0.1	< 0.001	0.24	11.9	4.9	1.1
E835245	13.8	< 0.1	0.2	1.4	0.2	1.4	204	0.6	< 0.001	0.36	18.4	8.8	2.8
E835246	9.4	< 0.1	0.2	1.4	0.2	< 0.1	215	0.1	< 0.001	0.23	14.7	23.9	1.3
E835247	14.6	< 0.1	0.1	0.5	0.1	0.5	111	0.6	0.001	0.19	13.4	2.9	0.5
E835248	7.4	< 0.1	0.2	1.3	0.2	< 0.1	229	< 0.1	0.001	0.20	13.3	9.4	1.2
E835249	14.6	< 0.1	0.1	0.9	0.1	< 0.1	240	0.3	< 0.001	0.42	17.0	11.2	1.7
E835250	35.3	0.2	0.2	1.2	0.2	< 0.1	86.1	< 0.1	< 0.001	5.77	8.6	1.0	3.8
E835251	20.8	0.1	0.2	1.1	0.2	< 0.1	175	< 0.1	< 0.001	0.38	14.7	8.6	1.4
E835252	16.8	< 0.1	0.1	1.0	0.2	< 0.1	240	< 0.1	< 0.001	0.33	13.9	4.9	1.1
E835253	14.4	0.1	0.1	0.9	0.1	< 0.1	221	0.1	0.001	0.28	14.7	5.5	0.9
E835254	16.1	0.3	0.1	0.8	0.1	< 0.1	228	< 0.1	< 0.001	0.30	15.7	5.4	1.0
E835255	56.4	0.1	0.2	1.1	0.2	< 0.1	132	< 0.1	< 0.001	0.25	33.1	8.5	2.2
E835256	50.0	< 0.1	0.1	1.1	0.2	< 0.1	135	< 0.1	0.002	0.60	18.9	5.1	1.7
E835257	23.5	< 0.1	0.2	1.4	0.2	< 0.1	199	< 0.1	0.002	0.49	16.0	11.1	1.6
E835258	22.4	0.1	0.1	0.8	0.1	0.5	226	0.5	0.004	0.37	12.8	2.5	0.7
E835259	68.1	< 0.1	0.2	1.2	0.2	< 0.1	193	< 0.1	< 0.001	0.37	14.6	8.5	1.3
E835260	8.8	< 0.1	0.1	0.5	0.1	0.2	207	0.8	< 0.001	0.95	37.3	43.7	2.6
E835261	75.8	< 0.1	0.2	1.4	0.2	< 0.1	196	0.2	0.003	0.41	16.0	9.0	1.6
E835262	25.7	< 0.1	0.1	0.9	0.1	< 0.1	179	< 0.1	< 0.001	0.41	17.7	6.5	10.9
E835263	18.0	< 0.1	0.2	1.1	0.2	< 0.1	235	0.1	< 0.001	0.39	14.1	6.6	1.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835264	29.5	< 0.1	0.2	1.2	0.2	< 0.1	198	< 0.1	0.002	0.40	18.0	8.5	1.4
E835265	19.6	< 0.1	0.2	1.2	0.2	< 0.1	203	< 0.1	< 0.001	0.41	18.3	7.5	1.6
E835266	82.6	< 0.1	0.1	0.8	0.1	< 0.1	367	< 0.1	0.001	0.18	14.9	9.6	2.4
E835267	12.8	< 0.1	0.1	0.8	0.1	< 0.1	219	0.1	0.002	0.32	15.1	4.8	1.0
E835268	34.1	< 0.1	0.1	1.0	0.2	< 0.1	201	0.1	0.002	0.29	13.4	5.2	0.9
E835269	75.0	< 0.1	0.2	1.3	0.2	< 0.1	148	< 0.1	< 0.001	0.37	21.7	11.0	1.8
E835270	84.3	0.1	0.2	1.2	0.2	< 0.1	84.0	< 0.1	0.003	5.41	8.4	0.7	0.2
E835271	42.0	< 0.1	0.1	0.9	0.1	< 0.1	242	0.4	< 0.001	0.28	12.5	6.2	1.0
E835272	108	0.1	0.2	1.6	0.2	< 0.1	126	< 0.1	< 0.001	0.24	14.0	3.0	0.9
E835273	55.0	< 0.1	0.2	1.4	0.2	< 0.1	191	< 0.1	< 0.001	0.34	17.3	10.9	2.0
E835274	25.9	< 0.1	0.2	1.6	0.2	< 0.1	184	< 0.1	0.004	0.56	19.0	14.4	2.0
E835275	17.8	< 0.1	0.1	0.6	0.1	1.3	164	0.8	0.001	0.43	16.4	3.0	1.0
E835276	53.3	< 0.1	0.2	1.4	0.2	< 0.1	180	< 0.1	0.002	0.32	12.0	4.6	1.1
E835277	56.0	< 0.1	0.2	1.5	0.3	< 0.1	230	0.3	0.001	0.30	11.6	10.0	1.8
E835278	66.7	< 0.1	0.3	1.7	0.3	< 0.1	220	0.2	0.001	0.35	12.8	14.6	2.2
E835279	28.2	0.1	0.2	1.0	0.1	< 0.1	255	< 0.1	0.004	0.23	13.0	3.6	0.8
E835280	30.9	< 0.1	0.1	0.5	0.1	< 0.1	194	14.3	< 0.001	0.91	37.1	42.2	2.5
E835281	7.5	< 0.1	0.1	0.7	0.1	0.2	266	0.6	< 0.001	0.36	14.8	5.4	1.0
E835282	24.3	< 0.1	0.1	1.0	0.1	< 0.1	205	< 0.1	0.001	0.26	13.9	7.5	1.3
E835283	33.7	0.4	0.1	0.6	0.1	0.1	168	0.1	0.004	0.07	10.2	3.7	1.5
E835284	97.5	< 0.1	0.4	2.6	0.4	< 0.1	202	< 0.1	0.004	0.48	12.8	18.9	3.3
E835285	69.2	0.9	0.1	1.0	0.2	0.7	138	1.0	< 0.001	0.18	14.3	1.7	0.6
E835286	14.2	< 0.1	0.1	0.9	0.1	0.3	234	0.5	< 0.001	0.37	12.9	4.7	0.8
E835287	23.9	< 0.1	0.1	0.8	0.1	0.2	246	0.3	0.009	0.32	12.9	6.0	0.9
E835288	41.5	< 0.1	0.1	0.8	0.1	0.2	216	0.4	0.001	0.28	14.6	5.3	1.0
E835289	11.3	< 0.1	0.2	1.1	0.2	< 0.1	223	0.1	0.001	0.33	11.9	6.8	1.0
E835290	33.0	0.1	0.2	1.2	0.2	< 0.1	83.4	< 0.1	0.001	5.42	8.6	0.7	0.2
E835291	10.6	< 0.1	0.2	1.1	0.1	< 0.1	242	0.2	< 0.001	0.34	13.3	6.6	1.0
E835292	12.5	< 0.1	0.2	1.1	0.2	< 0.1	244	0.2	< 0.001	0.33	12.3	6.7	1.2
E835293	11.3	< 0.1	0.2	1.3	0.2	< 0.1	263	0.2	< 0.001	0.36	13.7	7.9	1.2
E835294	12.5	< 0.1	0.2	1.1	0.2	< 0.1	233	0.2	0.002	0.38	12.3	6.8	1.7
E835295	6.1	< 0.1	0.2	1.0	0.1	0.2	275	0.5	< 0.001	0.32	12.8	5.1	0.9
E835296	11.0	< 0.1	0.2	1.1	0.1	0.5	203	0.7	< 0.001	0.39	14.0	5.1	0.8
E835297	28.3	< 0.1	0.2	1.4	0.2	< 0.1	181	0.1	< 0.001	0.64	17.5	10.3	1.3
E835298	27.7	< 0.1	0.1	1.0	0.2	0.5	235	0.5	0.001	0.39	17.0	8.4	1.4
E835299	45.8	< 0.1	0.2	1.4	0.2	0.4	191	0.4	< 0.001	0.46	21.6	11.6	1.5
E835300	10.0	< 0.1	0.1	0.5	0.1	0.4	171	2.3	< 0.001	0.92	36.2	21.9	1.7
E835301	11.9	< 0.1	0.1	0.6	0.1	0.4	202	0.4	< 0.001	0.31	12.8	2.9	0.5
E835302	29.4	< 0.1	0.2	1.3	0.2	0.6	180	0.7	0.001	0.30	12.9	5.6	1.0
E835303	99.1	< 0.1	0.3	1.9	0.3	0.6	144	1.1	0.001	0.26	18.2	4.1	1.3
E835304	42.9	< 0.1	0.1	0.5	0.1	0.6	139	0.7	< 0.001	0.31	11.6	0.4	0.4
E835305	41.1	< 0.1	0.1	0.9	0.1	< 0.1	138	0.1	< 0.001	0.21	12.3	4.7	0.9
E835306	39.0	< 0.1	0.1	0.9	0.1	0.5	152	0.8	< 0.001	0.31	15.6	6.1	1.3

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835307	42.2	0.1	0.1	0.9	0.1	< 0.1	187	0.1	< 0.001	0.31	16.1	5.2	1.4
E835308	16.4	< 0.1	0.4	2.5	0.4	< 0.1	213	< 0.1	< 0.001	0.20	14.1	17.2	2.2
E835309	33.8	< 0.1	0.3	2.0	0.3	< 0.1	204	< 0.1	< 0.001	0.32	22.1	17.4	2.2
E835310	188	< 0.1	0.3	1.8	0.3	0.3	131	2.3	< 0.001	2.28	32.2	2.9	2.5
E835311	30.8	< 0.1	0.2	1.1	0.2	< 0.1	207	< 0.1	0.004	0.32	18.6	20.3	1.6
E835312	25.4	< 0.1	0.2	1.1	0.2	< 0.1	197	0.1	< 0.001	0.33	17.5	5.3	1.2
E835313	23.3	< 0.1	0.1	0.8	0.1	< 0.1	190	0.2	0.001	0.30	14.3	5.1	1.0
E835314	398	< 0.1	0.2	1.6	0.2	0.3	53.4	1.6	0.003	0.64	16.6	7.2	1.7
E835315	15.9	< 0.1	0.1	0.7	0.1	0.4	194	0.5	< 0.001	0.28	12.8	1.3	0.5
E835316	43.8	< 0.1	0.2	1.2	0.2	< 0.1	157	< 0.1	0.003	0.39	14.8	3.9	1.2
E835317	519	< 0.1	0.4	2.6	0.4	0.1	81.7	1.0	0.002	0.34	90.1	8.7	3.0
E835318	173	< 0.1	0.2	1.2	0.2	< 0.1	139	< 0.1	< 0.001	0.32	156	5.4	1.6
E835319	20.6	< 0.1	0.2	1.3	0.2	< 0.1	192	< 0.1	0.001	0.40	18.7	10.0	2.0
E835320	18.6	< 0.1	0.2	1.1	0.2	< 0.1	218	4.4	< 0.001	0.91	41.5	97.0	6.1
E835321	26.0	< 0.1	0.2	1.2	0.2	< 0.1	197	< 0.1	< 0.001	0.39	20.0	9.3	1.6
E835322	54.4	< 0.1	0.2	1.1	0.2	< 0.1	130	< 0.1	< 0.001	0.20	18.4	7.2	1.8
E835323	98.0	< 0.1	0.3	1.8	0.2	< 0.1	197	< 0.1	0.002	0.79	17.4	23.3	2.5
E835324	19.6	< 0.1	0.1	0.9	0.1	< 0.1	230	0.1	< 0.001	0.32	14.1	4.7	1.0
E835325	96.4	< 0.1	0.2	1.1	0.2	< 0.1	150	0.1	< 0.001	0.36	20.2	9.1	2.0
E835326	62.8	< 0.1	0.1	0.6	0.1	0.7	140	0.7	< 0.001	0.46	15.8	1.6	0.8
E835327	16.4	< 0.1	0.2	1.0	0.2	< 0.1	164	< 0.1	0.005	0.27	15.2	6.4	1.2
E835328	64.0	< 0.1	0.2	1.3	0.2	< 0.1	180	< 0.1	0.002	0.30	16.7	6.8	1.6
E835329	36.2	< 0.1	0.1	0.9	0.1	< 0.1	203	< 0.1	0.002	0.29	13.0	3.7	1.0
E835330	34.7	0.1	0.2	1.3	0.2	< 0.1	88.0	< 0.1	0.001	5.96	8.6	0.7	0.2
E835331	16.3	< 0.1	0.2	1.1	0.2	< 0.1	213	< 0.1	0.001	0.41	12.9	8.5	1.2
E835332	17.3	0.1	0.1	0.9	0.1	< 0.1	203	< 0.1	< 0.001	0.33	14.3	5.3	1.1
E835333	26.0	0.2	0.1	0.9	0.1	< 0.1	186	< 0.1	< 0.001	0.28	16.8	6.7	1.5
E835334	16.8	< 0.1	0.1	0.9	0.1	< 0.1	255	0.1	< 0.001	0.33	14.4	5.5	1.0
E835335	51.4	< 0.1	0.1	1.0	0.1	< 0.1	180	0.1	< 0.001	0.49	15.2	9.8	1.6
E835336	16.5	< 0.1	0.1	1.0	0.1	< 0.1	233	< 0.1	0.004	0.28	15.6	6.4	1.0
E835337	43.2	< 0.1	0.1	0.7	0.1	< 0.1	204	< 0.1	0.002	0.31	13.0	3.8	0.9
E835338	19.7	< 0.1	0.1	0.9	0.1	< 0.1	217	< 0.1	0.001	0.27	14.3	3.4	1.0
E835339	8.1	< 0.1	0.1	1.0	0.1	< 0.1	245	< 0.1	< 0.001	0.26	13.6	4.3	1.1
E835340	72.0	< 0.1	0.2	1.1	0.2	0.4	229	47.1	0.001	0.95	43.2	87.0	4.9
E835341	8.3	< 0.1	0.1	0.8	0.1	< 0.1	223	0.1	< 0.001	0.25	12.4	4.1	0.8
E835342	10.3	< 0.1	0.2	1.1	0.2	< 0.1	246	0.1	< 0.001	0.35	13.1	7.2	1.1
E835343	14.2	< 0.1	0.2	1.2	0.2	< 0.1	237	< 0.1	< 0.001	0.38	14.2	7.5	1.6
E835344	24.6	< 0.1	0.2	1.0	0.2	0.9	142	1.3	0.002	0.71	21.0	3.0	1.3
E835345	20.0	< 0.1	0.1	0.8	0.1	0.1	230	0.6	0.002	0.31	13.6	3.5	0.8
E835346	47.2	< 0.1	0.2	1.1	0.2	< 0.1	154	< 0.1	< 0.001	0.26	13.8	3.3	1.2
E835347	68.7	< 0.1	0.2	1.0	0.2	< 0.1	184	< 0.1	< 0.001	0.27	14.4	4.6	1.0
E835348	60.9	< 0.1	0.1	0.9	0.1	< 0.1	188	< 0.1	< 0.001	0.31	13.7	3.5	1.0
E835349	32.9	< 0.1	0.2	1.5	0.2	< 0.1	269	0.1	0.002	0.24	13.5	10.4	1.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835350	35.2	0.1	0.2	1.2	0.2	< 0.1	85.3	< 0.1	< 0.001	5.82	8.8	0.7	0.2
E832156	15.4	0.4	0.1	0.5	0.1	0.2	307	0.2	0.002	0.33	16.4	3.0	0.5
E832157	25.3	< 0.1	0.3	1.9	0.3	< 0.1	240	0.4	< 0.001	0.19	17.3	14.9	1.6
E832158	28.1	0.1	0.1	0.9	0.1	< 0.1	192	< 0.1	< 0.001	0.28	14.4	6.4	1.2
E832159	13.9	< 0.1	< 0.1	0.2	< 0.1	< 0.1	50.2	0.2	0.001	0.05	1.2	1.2	0.4
E832160	6.5	< 0.1	0.2	0.9	0.1	0.4	209	2.6	< 0.001	1.03	42.7	81.7	4.6
E832161	25.1	< 0.1	0.2	1.0	0.1	< 0.1	251	0.4	< 0.001	0.36	13.1	7.3	1.3
E832162	78.0	< 0.1	0.3	1.7	0.2	< 0.1	76.2	0.3	0.005	0.20	4.4	8.7	15.4
E832163	21.9	< 0.1	0.2	1.2	0.2	< 0.1	244	< 0.1	0.006	0.32	15.4	5.5	1.3
E832164	15.2	0.1	0.1	1.0	0.2	0.1	237	0.1	0.001	0.31	16.8	5.1	1.4
E832165	4.9	< 0.1	0.2	1.1	0.2	< 0.1	240	< 0.1	< 0.001	0.35	12.4	12.9	2.0
E832166	16.6	0.2	0.1	0.8	0.1	< 0.1	223	< 0.1	< 0.001	0.31	15.6	5.8	1.3
E832167	8.9	0.1	0.1	0.4	< 0.1	< 0.1	123	< 0.1	< 0.001	0.38	10.9	2.7	0.8
E832168	16.8	0.2	0.2	1.3	0.2	< 0.1	141	< 0.1	< 0.001	0.12	10.3	4.2	1.5
E832169	121	< 0.1	0.4	2.7	0.4	0.1	213	0.2	0.001	0.43	11.1	13.1	6.2
E832170	34.1	< 0.1	0.1	0.7	0.1	0.2	77.4	0.5	< 0.001	5.77	8.5	0.2	0.1
E832171	73.9	< 0.1	0.2	1.4	0.2	< 0.1	144	< 0.1	< 0.001	0.59	18.5	6.1	1.9
E832172	122	0.2	0.3	1.9	0.3	< 0.1	15.4	0.2	0.001	0.30	3.5	1.7	0.7
E832173	15.8	< 0.1	0.1	0.8	0.1	< 0.1	214	0.1	< 0.001	0.31	15.4	6.1	1.4
E832174	29.7	< 0.1	0.1	0.9	0.1	< 0.1	208	0.1	0.002	0.36	14.9	6.6	1.2
E832175	40.6	0.1	0.2	1.2	0.2	< 0.1	151	< 0.1	< 0.001	0.26	13.3	3.3	1.0
E832176	17.3	< 0.1	0.2	1.2	0.2	< 0.1	157	< 0.1	< 0.001	0.29	15.3	6.5	1.6
E832177	27.3	< 0.1	0.2	1.2	0.2	< 0.1	170	< 0.1	< 0.001	0.46	13.7	10.2	2.1
E832178	21.9	< 0.1	0.2	1.4	0.2	< 0.1	204	< 0.1	< 0.001	0.29	14.5	6.0	1.2
E832179	85.5	< 0.1	0.1	0.9	0.1	< 0.1	63.8	0.2	0.004	0.17	2.0	5.1	3.4
E832180	10.6	< 0.1	0.2	1.2	0.2	< 0.1	214	0.2	0.002	1.03	43.0	66.7	5.2
E832181	12.8	< 0.1	0.2	1.1	0.2	< 0.1	214	< 0.1	0.004	0.38	14.2	5.7	1.4
E832182	1.1	< 0.1	0.1	0.9	0.2	0.1	366	0.2	< 0.001	0.18	9.9	8.4	1.6
E832183	29.5	< 0.1	0.5	2.9	0.4	< 0.1	157	< 0.1	0.001	0.36	19.0	17.7	6.0
E832184	32.8	< 0.1	0.2	1.4	0.2	< 0.1	216	< 0.1	0.001	0.36	15.4	7.2	1.5
E832185	46.0	< 0.1	0.2	1.1	0.2	< 0.1	235	< 0.1	0.001	0.38	13.4	7.4	1.8
E832186	9.3	< 0.1	0.2	1.2	0.2	0.1	246	0.1	< 0.001	0.32	12.7	6.6	1.5
E832187	70.8	0.2	0.3	1.7	0.3	< 0.1	126	< 0.1	< 0.001	0.15	20.7	2.1	0.6
E832188	48.4	0.1	0.2	1.1	0.2	0.8	85.9	60.1	0.003	0.07	4.4	0.6	0.4
E832189	17.3	< 0.1	0.1	0.9	0.1	< 0.1	224	0.3	< 0.001	0.34	14.6	5.9	1.0
E832190	34.4	0.1	0.2	1.2	0.2	< 0.1	86.9	< 0.1	< 0.001	5.99	8.9	0.7	0.2
E832191	16.2	< 0.1	0.2	1.2	0.2	< 0.1	225	< 0.1	< 0.001	0.31	14.5	3.7	1.0
E832192	6.8	< 0.1	0.2	1.1	0.2	< 0.1	244	< 0.1	< 0.001	0.36	17.5	5.5	1.3
E832193	49.5	0.3	0.2	1.2	0.2	0.2	185	0.3	< 0.001	0.23	21.6	6.5	1.3
E832194	53.3	0.1	0.3	2.0	0.3	< 0.1	75.7	< 0.1	0.001	0.14	5.9	2.9	1.0
E832195	91.2	< 0.1	0.2	1.6	0.2	< 0.1	192	< 0.1	0.001	0.69	15.7	11.3	23.8
E832196	13.1	0.3	0.2	1.1	0.2	< 0.1	117	0.1	< 0.001	0.09	13.6	3.7	1.4
E832197	8.3	0.3	0.1	0.8	0.1	< 0.1	164	0.1	< 0.001	0.15	10.4	2.9	1.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832242	390	< 0.1	0.3	2.2	0.4	0.2	48.5	0.7	0.004	0.29	3.9	10.4	6.0
E832243	474	< 0.1	0.6	4.5	0.8	0.1	68.0	4.1	0.006	0.29	3.2	7.9	5.5
E832244	88.9	< 0.1	0.2	1.2	0.2	< 0.1	44.5	0.1	0.004	0.30	1.1	4.5	4.2
E832245	199	< 0.1	0.4	2.7	0.4	< 0.1	56.8	0.7	0.008	0.59	5.1	11.4	13.5
E832246	56.8	< 0.1	0.2	1.2	0.2	< 0.1	37.7	0.3	0.003	0.15	2.1	6.6	5.6
E832247	36.2	< 0.1	0.1	0.8	0.1	0.1	45.4	1.6	0.002	0.17	7.5	3.8	1.4
E832248	34.1	< 0.1	0.1	0.5	0.1	< 0.1	51.0	0.1	0.002	< 0.05	1.1	2.1	1.2
E832249	204	< 0.1	0.1	0.9	0.2	< 0.1	55.2	0.4	0.002	0.19	3.4	2.8	3.0
E832250	32.7	< 0.1	0.2	1.2	0.2	< 0.1	89.1	< 0.1	< 0.001	5.77	8.8	0.7	0.2
E832251	24.2	< 0.1	0.1	0.5	0.1	< 0.1	37.0	0.2	< 0.001	0.09	2.0	2.9	1.6
E832252	89.1	< 0.1	0.1	0.6	0.1	0.1	63.8	0.3	0.002	0.13	2.0	4.0	28.5
E832253	25.9	< 0.1	0.3	1.8	0.3	< 0.1	197	< 0.1	< 0.001	0.72	21.4	16.5	2.1
E832254	26.2	< 0.1	< 0.1	0.2	< 0.1	< 0.1	51.5	0.2	0.001	0.05	0.8	1.5	1.6
E832255	14.9	< 0.1	0.2	1.2	0.2	< 0.1	190	< 0.1	< 0.001	0.40	13.4	8.5	1.7
E832256	10.3	< 0.1	0.2	1.0	0.1	< 0.1	205	0.1	< 0.001	0.30	11.1	6.0	1.0
E832257	32.2	< 0.1	0.1	0.4	< 0.1	< 0.1	88.8	0.3	0.002	0.14	3.8	2.5	1.2
E832258	32.4	< 0.1	0.2	1.4	0.2	< 0.1	174	< 0.1	< 0.001	0.60	17.7	12.2	1.9
E832259	37.8	< 0.1	0.2	0.9	0.1	< 0.1	38.5	0.2	< 0.001	0.18	5.8	7.7	6.6
E832260	39.4	< 0.1	0.2	1.1	0.2	0.2	213	14.5	< 0.001	1.01	41.7	81.1	4.2
E832261	25.8	< 0.1	0.2	1.4	0.2	< 0.1	187	< 0.1	< 0.001	0.54	15.8	12.6	1.5
E832262	13.1	< 0.1	0.2	1.2	0.2	0.1	236	0.2	< 0.001	0.38	14.1	7.9	1.2
E832263	7.7	< 0.1	0.2	1.1	0.2	< 0.1	266	0.1	< 0.001	0.37	14.1	6.4	1.3
E832264	11.8	< 0.1	0.2	1.1	0.2	< 0.1	268	0.2	< 0.001	0.34	13.2	6.1	2.7
E832265	11.0	< 0.1	0.2	1.1	0.2	< 0.1	261	0.1	0.002	0.34	13.6	6.0	3.4
E832266	16.8	< 0.1	0.2	1.3	0.2	< 0.1	249	< 0.1	< 0.001	0.51	16.7	10.5	1.6
E832267	30.5	< 0.1	0.1	0.5	0.1	< 0.1	69.0	0.3	0.003	0.16	2.3	3.0	2.4
E837051	10.4	< 0.1	0.2	1.3	0.2	< 0.1	237	< 0.1	< 0.001	0.31	15.7	5.8	1.1
E837052	6.0	< 0.1	0.1	0.9	0.1	< 0.1	261	< 0.1	< 0.001	0.34	15.7	7.1	1.2
E837053	13.6	0.2	0.1	0.9	0.1	< 0.1	247	< 0.1	< 0.001	0.35	15.6	5.7	1.0
E837054	13.3	0.2	0.1	0.7	0.1	1.0	161	1.4	< 0.001	0.41	20.9	2.4	1.1
E837055	2.9	< 0.1	0.1	0.8	0.1	0.2	271	0.4	< 0.001	0.28	14.8	5.8	0.9
E837056	4.8	< 0.1	0.1	0.8	0.1	< 0.1	276	0.2	< 0.001	0.27	13.5	7.0	1.0
E837057	9.0	< 0.1	0.2	1.1	0.2	< 0.1	258	0.2	< 0.001	0.24	13.8	6.5	1.1
E837058	23.8	0.1	0.1	0.9	0.1	0.2	118	0.4	< 0.001	0.34	18.9	13.2	1.8
E837059	3.6	< 0.1	0.2	1.1	0.2	< 0.1	267	< 0.1	< 0.001	0.23	14.8	7.8	0.8
E837060	40.2	< 0.1	0.2	0.9	0.1	< 0.1	230	11.1	< 0.001	0.89	44.5	73.1	4.3
E837061	7.4	< 0.1	0.2	1.4	0.2	< 0.1	245	0.1	< 0.001	0.27	14.9	11.8	1.3
E837062	14.6	0.2	0.3	1.6	0.2	0.5	272	0.4	< 0.001	0.22	15.3	10.2	1.6
E837063	8.3	0.1	0.3	2.1	0.3	< 0.1	227	0.1	0.001	0.24	16.5	11.6	1.8
E837064	19.7	0.1	0.2	1.1	0.2	< 0.1	197	< 0.1	< 0.001	0.40	19.1	7.7	1.4
E837065	18.8	0.1	0.1	0.9	0.1	1.0	131	1.0	< 0.001	0.34	16.9	2.6	0.9
E837066	7.4	< 0.1	0.1	0.9	0.1	0.1	266	0.2	< 0.001	0.33	14.0	5.1	0.9
E837067	3.7	< 0.1	0.1	0.8	0.1	< 0.1	256	0.1	< 0.001	0.35	14.2	4.8	0.9

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837068	2.7	< 0.1	0.1	0.9	0.1	< 0.1	263	0.2	< 0.001	0.27	13.9	8.9	1.6
E837069	4.4	< 0.1	0.1	0.9	0.1	< 0.1	276	0.3	< 0.001	0.26	14.3	4.4	0.9
E837070	34.2	0.1	0.2	1.2	0.2	< 0.1	90.3	< 0.1	< 0.001	5.84	8.7	0.7	0.2
E837071	3.6	< 0.1	0.1	0.9	0.1	0.1	263	0.3	< 0.001	0.33	14.0	6.1	1.2
E837072	5.3	0.2	0.1	0.8	0.1	< 0.1	261	0.1	< 0.001	0.28	14.8	3.7	0.7
E837073	14.1	0.1	0.1	0.9	0.2	< 0.1	262	< 0.1	< 0.001	0.34	14.4	4.3	1.0
E837074	5.8	< 0.1	0.1	0.8	0.1	0.3	246	0.4	< 0.001	0.28	15.3	8.4	1.1
E837075	5.3	0.3	0.1	0.8	0.1	0.1	249	0.2	< 0.001	0.29	15.9	4.2	0.9
E837076	4.9	0.2	0.1	0.7	0.1	0.2	265	0.2	< 0.001	0.27	13.9	3.5	0.7
E837077	18.5	< 0.1	0.2	1.5	0.2	0.2	206	0.2	0.001	0.27	18.8	15.2	1.5
E837078	18.3	0.1	0.1	0.8	0.1	< 0.1	266	< 0.1	< 0.001	0.26	13.3	8.5	0.9
E837079	4.6	< 0.1	0.1	0.9	0.1	0.5	270	0.2	< 0.001	0.27	14.3	19.0	1.2
E837080	26.1	< 0.1	0.2	1.0	0.1	< 0.1	224	7.0	< 0.001	0.88	40.9	72.1	4.5
E837091	5.2	< 0.1	0.2	1.2	0.2	0.3	260	0.3	< 0.001	0.22	14.8	8.7	1.3
E837092	6.6	< 0.1	0.2	1.2	0.2	0.8	169	0.6	< 0.001	0.21	15.1	5.0	1.0
E837093	6.1	< 0.1	0.3	1.6	0.2	0.4	245	0.4	< 0.001	0.22	13.8	6.1	1.3
E837094	2.5	< 0.1	0.1	1.0	0.2	0.1	268	0.2	< 0.001	0.28	12.6	5.1	1.1
E837095	5.3	< 0.1	0.1	0.9	0.1	0.1	269	0.2	< 0.001	0.32	13.4	6.7	1.5
E837096	4.4	0.1	0.1	0.9	0.1	0.2	250	0.2	< 0.001	0.28	13.4	6.4	0.8
E837097	4.5	0.2	0.1	0.9	0.1	0.3	242	0.4	< 0.001	0.26	12.6	5.0	1.1
E837098	5.9	0.2	0.1	0.9	0.1	0.3	277	0.2	< 0.001	0.29	13.3	4.3	0.7
E837099	11.1	0.4	0.1	0.9	0.1	0.3	258	0.4	< 0.001	0.34	15.3	6.3	1.0
E837100	15.7	< 0.1	0.2	1.2	0.2	0.2	224	9.7	< 0.001	0.96	44.0	82.2	4.7
E837111	4.5	0.2	0.1	0.8	0.1	< 0.1	247	0.1	< 0.001	0.32	15.1	3.1	0.9
E837112	15.8	< 0.1	0.2	1.3	0.2	0.5	199	0.5	< 0.001	0.30	18.8	13.3	1.5
E837113	24.8	< 0.1	0.1	0.9	0.1	0.7	177	1.0	< 0.001	0.33	15.6	3.2	1.0
E837114	8.8	< 0.1	0.1	1.0	0.1	< 0.1	230	0.1	< 0.001	0.38	15.7	6.4	1.3
E837115	35.5	0.3	0.2	1.1	0.1	0.5	211	0.5	< 0.001	0.40	18.6	11.0	1.6
E837116	19.1	0.1	0.2	1.1	0.2	0.3	238	0.3	< 0.001	0.32	15.7	7.9	1.2
E837117	18.7	0.3	0.2	1.1	0.2	0.5	238	0.4	< 0.001	0.37	19.5	11.5	1.7
E837118	4.6	< 0.1	0.1	0.9	0.1	0.2	262	0.4	< 0.001	0.28	13.0	4.5	0.9
E837119	5.9	< 0.1	0.1	0.9	0.1	0.4	224	0.5	< 0.001	0.28	15.0	7.3	1.0
E837120	8.0	< 0.1	0.2	1.3	0.2	0.4	209	4.2	< 0.001	0.96	43.3	96.8	5.2
E837121	12.9	0.1	0.2	1.1	0.2	0.2	215	0.2	< 0.001	0.35	17.3	10.7	1.4
E837122	5.7	< 0.1	0.1	0.9	0.1	0.3	250	0.4	< 0.001	0.26	14.4	4.6	0.9
E837123	3.8	< 0.1	0.1	0.7	0.1	0.5	216	0.4	< 0.001	0.25	13.3	1.4	0.6
E837124	6.3	< 0.1	0.1	0.9	0.1	0.2	234	0.4	< 0.001	0.26	14.4	5.4	0.8
E837125	7.8	< 0.1	0.1	0.8	0.1	0.2	248	0.3	< 0.001	0.28	14.4	7.5	1.0
E837126	21.6	0.1	0.2	1.0	0.1	0.4	201	0.6	< 0.001	0.41	16.7	9.2	1.5
E837127	12.3	< 0.1	0.2	1.1	0.2	0.1	209	0.2	< 0.001	0.32	17.8	12.2	1.3
E837128	16.1	0.1	0.2	1.1	0.2	< 0.1	202	0.1	< 0.001	0.44	19.0	8.7	1.5
E837129	10.4	0.2	0.1	0.8	0.1	0.2	232	0.2	< 0.001	0.28	14.9	16.3	1.2
E837130	37.2	< 0.1	0.2	1.3	0.2	< 0.1	93.0	< 0.1	< 0.001	5.66	8.1	0.7	0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837131	7.2	< 0.1	0.1	0.8	0.1	0.3	235	0.3	< 0.001	0.30	14.9	5.0	0.9
E837132	6.5	0.2	0.2	1.0	0.1	0.3	245	0.3	< 0.001	0.27	16.9	10.7	1.1
E837133	29.1	< 0.1	0.2	1.3	0.2	0.2	215	0.2	< 0.001	0.42	18.0	7.0	1.4
E837134	17.9	0.1	0.2	1.2	0.2	0.2	212	0.2	< 0.001	0.37	17.7	15.4	1.7
E837135	10.3	0.1	0.2	1.1	0.2	< 0.1	233	0.1	< 0.001	0.27	17.0	8.4	1.3
E837136	11.3	0.1	0.1	1.0	0.1	0.3	227	0.4	< 0.001	0.26	16.1	5.1	1.0
E837137	9.9	< 0.1	0.2	1.0	0.1	0.3	245	0.4	< 0.001	0.31	15.0	5.2	1.1
E837138	4.5	< 0.1	0.1	0.7	0.1	0.1	257	0.2	< 0.001	0.25	13.3	4.9	0.8
E837139	5.2	< 0.1	0.2	1.0	0.1	0.1	267	0.4	< 0.001	0.25	13.6	6.6	1.1
E837140	23.8	< 0.1	0.2	1.0	0.2	< 0.1	216	11.6	< 0.001	0.83	42.0	85.9	6.6
E837141	8.3	< 0.1	0.1	0.7	0.1	0.4	189	0.7	< 0.001	0.26	13.6	4.8	0.8
E837142	23.3	0.1	0.2	1.0	0.2	0.3	195	0.3	< 0.001	0.36	22.5	6.1	1.3
E837143	13.7	< 0.1	0.1	0.9	0.1	< 0.1	190	0.1	< 0.001	0.31	15.9	6.9	1.0
E837144	83.9	< 0.1	0.1	0.9	0.1	< 0.1	246	0.4	< 0.001	0.26	14.0	6.1	1.0
E837145	47.5	0.4	0.3	1.8	0.3	0.3	454	0.6	< 0.001	0.54	28.1	11.8	2.2
E837146	7.7	0.3	0.1	0.9	0.1	0.3	250	1.3	< 0.001	0.31	14.2	6.1	1.0
E837147	7.5	< 0.1	0.1	1.0	0.1	0.6	228	0.5	< 0.001	0.33	16.2	5.2	1.0
E837148	7.5	0.3	0.1	0.8	0.1	0.4	217	0.5	< 0.001	0.29	14.4	4.1	0.8
E837149	19.4	0.2	0.2	1.1	0.1	0.1	198	0.2	< 0.001	0.35	17.5	7.8	1.5
E837150	35.9	0.1	0.2	1.2	0.2	< 0.1	91.1	< 0.1	< 0.001	5.90	8.6	0.7	0.2
E837151	7.2	< 0.1	0.1	0.7	0.1	0.5	192	0.5	< 0.001	0.27	14.3	2.3	0.7
E837152	5.8	< 0.1	0.1	0.8	0.1	0.3	246	0.4	< 0.001	0.28	13.4	8.3	1.1
E837153	12.6	< 0.1	0.1	1.0	0.1	0.4	220	0.5	< 0.001	0.31	15.6	7.9	1.2
E837154	5.5	< 0.1	0.1	0.9	0.1	0.4	252	0.3	< 0.001	0.29	14.8	4.7	1.0
E837155	4.9	< 0.1	0.1	0.7	0.1	0.3	248	0.3	< 0.001	0.30	15.4	4.8	0.9
E837156	24.0	0.1	0.2	1.7	0.2	0.5	204	0.2	< 0.001	0.31	17.0	8.4	3.9
E837157	8.7	0.4	0.1	0.8	0.1	0.3	210	2.1	< 0.001	0.35	19.0	4.9	4.9
E837158	26.7	0.4	0.1	0.8	0.1	0.3	262	0.4	0.001	0.39	16.3	7.6	1.1
E837159	10.4	0.6	0.1	0.8	0.1	0.5	242	0.6	< 0.001	0.40	18.5	9.5	1.1
E837160	7.6	< 0.1	0.1	0.5	0.1	0.2	220	0.4	< 0.001	0.87	36.6	51.4	2.5
E837161	11.5	0.1	0.2	1.3	0.2	< 0.1	204	0.1	< 0.001	0.33	15.6	12.5	1.6
E837162	28.7	0.1	0.1	0.5	0.1	0.7	154	0.9	< 0.001	0.35	18.5	1.5	0.8
E837163	7.6	< 0.1	0.2	1.1	0.2	0.4	237	0.5	< 0.001	0.27	14.4	7.6	1.3
E837164	7.5	< 0.1	0.2	1.2	0.2	0.4	247	0.3	< 0.001	0.29	15.0	12.0	1.3
E837165	3.0	0.1	0.3	1.7	0.2	0.4	261	0.2	< 0.001	0.19	13.3	8.4	1.5
E837166	8.7	< 0.1	0.2	1.0	0.2	0.2	268	0.2	< 0.001	0.22	11.4	7.0	1.2
E837167	2.7	< 0.1	0.1	0.9	0.1	0.2	271	0.2	< 0.001	0.26	12.1	6.2	0.9
E837168	2.4	< 0.1	0.1	0.8	0.1	0.1	284	3.6	< 0.001	0.25	11.6	4.7	0.8
E837169	3.4	0.2	0.2	1.0	0.1	0.3	267	0.3	< 0.001	0.30	13.1	5.3	1.1
E837170	34.7	0.2	0.2	1.1	0.1	< 0.1	81.3	< 0.1	< 0.001	5.45	8.1	0.7	0.2
E837171	1.9	< 0.1	0.2	1.0	0.1	0.3	266	0.3	< 0.001	0.32	13.7	5.7	1.1
E837172	13.6	< 0.1	0.2	1.1	0.1	< 0.1	209	0.1	< 0.001	0.56	17.1	11.4	1.4
E837173	14.9	< 0.1	0.1	0.9	0.1	< 0.1	248	< 0.1	< 0.001	0.37	14.2	5.1	1.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837174	12.7	< 0.1	0.1	1.0	0.1	< 0.1	238	0.1	< 0.001	0.39	15.2	6.3	1.2
E837175	3.1	< 0.1	0.1	1.0	0.1	0.2	286	0.2	< 0.001	0.27	12.5	5.1	0.9
E837176	2.4	< 0.1	0.2	1.0	0.1	0.3	293	0.3	< 0.001	0.28	13.5	7.2	1.1
E837177	2.4	0.1	0.1	0.9	0.1	0.2	276	0.1	< 0.001	0.28	12.3	5.5	1.1
E837178	10.4	< 0.1	0.2	1.5	0.2	0.5	253	0.6	< 0.001	0.21	21.8	18.9	1.8
E837179	16.1	0.1	0.1	0.6	0.1	0.6	160	0.7	0.001	0.37	20.9	1.9	0.7
E837180	35.7	< 0.1	0.2	1.0	0.1	0.5	219	20.1	< 0.001	0.90	45.5	84.5	4.4
E837181	5.7	< 0.1	0.1	0.7	0.1	0.3	260	0.4	< 0.001	0.29	13.8	4.8	0.9
E837182	24.9	0.3	0.2	1.2	0.2	0.4	203	0.4	0.001	0.31	16.4	11.2	1.5
E837183	12.7	0.2	0.1	1.0	0.1	0.5	227	1.5	< 0.001	0.28	16.5	21.6	1.4
E837184	17.9	0.4	0.1	0.9	0.1	0.3	207	0.4	< 0.001	0.43	17.4	6.3	1.4
E837185	6.7	0.4	0.1	0.8	0.1	0.2	261	0.3	0.002	0.27	13.0	3.8	0.8
E837186	2.0	0.2	0.2	1.1	0.1	0.2	272	0.2	< 0.001	0.24	11.3	9.8	1.1
E837187	8.7	0.1	0.1	0.7	0.1	0.4	250	0.4	< 0.001	0.31	14.2	4.1	0.8
E837188	16.6	0.2	0.1	1.0	0.1	0.6	217	0.6	< 0.001	0.41	16.5	7.7	1.2
E837189	18.5	0.2	0.2	1.3	0.2	0.5	210	0.6	< 0.001	0.32	19.7	22.8	1.5
E837190	34.8	0.2	0.1	0.8	0.1	0.2	85.4	0.4	< 0.001	5.57	8.3	0.4	0.2
E837101	5.2	< 0.1	0.1	0.6	0.1	0.5	171	0.6	< 0.001	0.27	12.8	2.3	0.5
E837102	4.7	0.1	0.1	0.9	0.1	0.2	230	0.3	< 0.001	0.29	13.3	4.8	0.9
E837103	36.1	0.3	0.2	1.3	0.2	0.4	201	0.4	< 0.001	0.41	16.4	8.6	1.6
E837104	5.7	0.4	0.2	0.9	0.1	0.3	260	0.2	< 0.001	0.29	16.2	5.9	0.9
E837105	5.9	0.2	0.1	0.8	0.1	< 0.1	270	0.1	< 0.001	0.30	14.7	3.2	0.8
E837106	12.2	0.4	0.1	0.9	0.1	0.1	194	0.2	< 0.001	0.38	22.1	6.7	1.4
E837107	16.8	0.1	0.2	1.0	0.1	< 0.1	223	0.1	< 0.001	0.44	21.2	6.3	1.5
E837108	4.4	< 0.1	0.1	0.8	0.1	0.2	246	0.3	< 0.001	0.28	15.9	7.8	0.9
E837109	6.2	< 0.1	0.1	0.9	0.1	0.3	246	0.3	< 0.001	0.30	14.9	4.9	0.9
E837110	35.0	0.1	0.2	1.2	0.2	< 0.1	88.5	0.1	< 0.001	5.73	8.5	0.7	0.2
EA32241	52.4	< 0.1	0.2	1.2	0.2	0.3	130	0.5	< 0.001	0.32	16.0	15.4	2.5
GXR-1 Meas	1180		0.4	2.3	0.3	< 0.1	297	150		0.38	716	2.4	33.7
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas	1110		0.3	2.1	0.3	< 0.1	277	157		0.41	773	2.7	35.4
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas	1200		0.3	2.0	0.3	< 0.1	300	197		0.44	795	2.6	37.3
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2410
DH-1a Cert												910	2629
DH-1a Meas												> 500	2380
DH-1a Cert												910	2629
DH-1a Meas												> 500	2490
DH-1a Cert												910	2629
GXR-4 Meas	5920		0.2	1.0	0.2	0.5	211	35.5		3.20	45.7	17.9	5.8
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas	5910		0.2	1.0	0.1	0.6	195	35.8		3.29	51.1	20.8	5.9



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas	6320		0.2	1.0	0.1	0.6	207	37.4		3.41	51.0	21.8	6.2
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	26.8		0.5	3.3		< 0.1	171	< 0.1		0.64	22.7	11.6	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas	30.5		0.5	3.1		< 0.1	166	< 0.1		0.64	24.9	11.4	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas	29.3		0.5	3.0		< 0.1	153	< 0.1		0.66	24.5	10.4	2.5
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	69.5			1.7	0.3	< 0.1	37.1	< 0.1		2.20	95.3	5.0	1.4
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas	71.3			1.7	0.3	< 0.1	34.3	< 0.1		2.32	108	5.2	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas	73.4			1.6	0.3	< 0.1	34.6	0.1		2.42	108	4.5	1.4
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	93.6			1.9			143				5.3		
DNC-1a Cert	100			2.0			144				6.3		
DNC-1a Meas	93.4			1.9			132				5.9		
DNC-1a Cert	100			2.0			144				6.3		
DNC-1a Meas	99.9			1.9			144				6.1		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	29.8		0.5	3.4	0.5	0.3	171	1.5		0.92	33.1	15.3	5.8
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas	29.4		0.5	3.4	0.5	0.8	167	1.5		0.93	36.7	16.0	6.0
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas	37.4		0.5	3.4	0.5	0.7	178	1.6		0.85	39.6	16.5	6.2
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	378			1.5	0.2	< 0.1	31.8	< 0.1		0.25	19.6	14.4	2.7
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas	372			1.5	0.2	< 0.1	29.4	0.2		0.24	19.6	14.0	2.8
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas	410			1.4	0.2	< 0.1	29.6	0.2		0.26	21.2	15.8	2.8
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas	362			1.4	0.2	< 0.1	28.1	0.2		0.26	22.0	14.8	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 45d (4-Acid) Meas	375			1.3	0.2	0.2	25.1	0.2		0.27	21.4	12.2	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	246		0.4	2.9	0.4	< 0.1	151	0.2			745	13.7	2.5
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	251		0.4	3.0	0.4	0.2	145	0.3			744	14.3	2.5
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	265		0.4	2.8	0.4	0.9	143	1.3			790	16.0	2.6
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	248		0.4	2.7	0.4	0.2	141	0.7			789	14.2	2.5
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	252		0.4	2.4	0.4	< 0.1	119	0.3			781	11.0	2.2
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
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OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													
OREAS 222(FIRE ASSAY) Meas													



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835451 Dup	13.1	< 0.1	0.2	1.1	0.2	< 0.1	274	< 0.1	0.001	0.26	12.7	4.8	1.1
E835460 Orig													
E835460 Dup													
E835471 Orig													
E835471 Dup													
E835480 Orig													
E835480 Dup													
E835489 Orig	9.8	0.4	0.2	1.0	0.1	< 0.1	232	0.1	< 0.001	0.49	16.4	6.7	1.2
E835489 Dup	10.0	0.2	0.1	1.0	0.2	< 0.1	234	< 0.1	< 0.001	0.49	16.6	6.5	1.2
E835491 Orig	4.6	< 0.1	0.1	1.0	0.2	< 0.1	244	< 0.1	< 0.001	0.31	17.2	7.5	1.2
E835491 Dup	4.2	0.1	0.1	1.0	0.1	< 0.1	248	< 0.1	< 0.001	0.31	17.0	8.2	1.2
E835495 Orig													
E835495 Dup													
E835205 Orig													
E835205 Dup													
E835215 Orig													
E835215 Dup													
E835227 Orig	5.4	< 0.1	0.3	1.7	0.3	< 0.1	235	< 0.1	< 0.001	0.23	15.9	8.8	1.4
E835227 Dup	5.4	0.1	0.3	1.7	0.3	< 0.1	240	< 0.1	< 0.001	0.22	16.0	6.2	1.4
E835232 Orig	13.6	< 0.1	0.2	1.5	0.2	< 0.1	350	< 0.1	< 0.001	0.37	16.2	8.2	1.3
E835232 Dup	12.8	< 0.1	0.3	1.6	0.2	< 0.1	357	< 0.1	0.001	0.38	16.7	8.7	1.4
E835240 Orig													
E835240 Dup													
E835263 Orig	18.0	< 0.1	0.2	1.1	0.2	< 0.1	235	0.1	< 0.001	0.39	14.1	6.6	1.2
E835263 Dup	15.1	< 0.1	0.2	1.1	0.2	< 0.1	238	< 0.1	< 0.001	0.40	14.3	6.3	1.2
E835271 Orig													
E835271 Dup													
E835272 Orig													
E835272 Dup													
E835273 Orig	55.0	< 0.1	0.2	1.4	0.2	< 0.1	191	< 0.1	< 0.001	0.34	17.3	10.9	2.0
E835273 Dup	67.2	< 0.1	0.2	1.3	0.2	< 0.1	192	< 0.1	0.006	0.36	17.1	10.0	1.5
E835275 Orig	17.8	< 0.1	0.1	0.6	0.1	1.3	164	0.8	0.001	0.43	16.4	3.0	1.0
E835275 Dup	14.4	< 0.1	0.1	0.8	0.1	0.5	200	0.6	< 0.001	0.43	16.8	9.0	1.4
E835285 Orig													
E835285 Dup													
E835300 Orig													
E835300 Dup													
E835302 Orig	29.4	< 0.1	0.2	1.3	0.2	0.6	180	0.7	0.001	0.30	12.9	5.6	1.0
E835302 Dup	34.0	< 0.1	0.2	1.3	0.2	0.7	183	13.9	0.001	0.30	13.2	5.1	1.0
E835311 Orig													
E835311 Dup													
E835320 Orig													
E835320 Dup													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835327 Orig	16.4	< 0.1	0.2	1.0	0.2	< 0.1	164	< 0.1	0.005	0.27	15.2	6.4	1.2
E835327 Dup	16.6	< 0.1	0.2	1.0	0.2	< 0.1	166	< 0.1	0.001	0.27	14.9	6.1	1.4
E835335 Orig													
E835335 Dup													
E835345 Orig	20.0	< 0.1	0.1	0.8	0.1	0.1	230	0.6	0.002	0.31	13.6	3.5	0.8
E835345 Dup	14.7	< 0.1	0.1	0.8	0.1	< 0.1	225	0.2	< 0.001	0.31	14.0	5.3	0.9
E832160 Orig													
E832160 Dup													
E832163 Orig													
E832163 Dup													
E832170 Orig	34.1	< 0.1	0.1	0.7	0.1	0.2	77.4	0.5	< 0.001	5.77	8.5	0.2	0.1
E832170 Dup	33.5	< 0.1	0.2	1.3	0.2	< 0.1	86.8	< 0.1	< 0.001	5.99	8.8	0.8	0.2
E832175 Orig													
E832175 Dup													
E832185 Orig													
E832185 Dup													
E832195 Orig													
E832195 Dup													
E832197 Orig	8.3	0.3	0.1	0.8	0.1	< 0.1	164	0.1	< 0.001	0.15	10.4	2.9	1.0
E832197 Dup	9.4	0.1	0.1	0.9	0.1	< 0.1	163	< 0.1	< 0.001	0.15	10.6	3.0	1.0
E832244 Orig	88.9	< 0.1	0.2	1.2	0.2	< 0.1	44.5	0.1	0.004	0.30	1.1	4.5	4.2
E832244 Dup	87.9	< 0.1	0.2	1.2	0.2	< 0.1	48.1	0.2	0.004	0.31	1.1	4.5	4.2
E832254 Orig													
E832254 Dup													
E832264 Orig													
E832264 Dup													
E837057 Orig													
E837057 Dup													
E837067 Orig	3.7	< 0.1	0.1	0.8	0.1	< 0.1	256	0.1	< 0.001	0.35	14.2	4.8	0.9
E837067 Dup	9.6	< 0.1	0.1	0.8	0.1	< 0.1	248	0.1	< 0.001	0.33	13.9	4.5	0.9
E837072 Orig													
E837072 Dup													
E837073 Orig	14.1	0.1	0.1	0.9	0.2	< 0.1	262	< 0.1	< 0.001	0.34	14.4	4.3	1.0
E837073 Dup	14.3	0.1	0.1	0.9	0.1	< 0.1	261	< 0.1	< 0.001	0.34	14.3	5.1	1.0
E837074 Orig	5.8	< 0.1	0.1	0.8	0.1	0.3	246	0.4	< 0.001	0.28	15.3	8.4	1.1
E837074 Dup	5.8	0.1	0.1	0.8	0.1	0.3	246	0.4	< 0.001	0.27	14.7	5.4	0.8
E837092 Orig													
E837092 Dup													
E837112 Orig													
E837112 Dup													
E837130 Orig	37.2	< 0.1	0.2	1.3	0.2	< 0.1	93.0	< 0.1	< 0.001	5.66	8.1	0.7	0.2
E837130 Dup	35.9	< 0.1	0.2	1.1	0.2	< 0.1	76.0	0.1	< 0.001	5.63	7.8	0.5	0.1
E837132 Orig	6.5	0.2	0.2	1.0	0.1	0.3	245	0.3	< 0.001	0.27	16.9	10.7	1.1

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837132 Dup	6.9	0.1	0.2	1.0	0.1	0.3	245	0.3	< 0.001	0.27	16.2	5.7	1.0
E837134 Orig	17.9	0.1	0.2	1.2	0.2	0.2	212	0.2	< 0.001	0.37	17.7	15.4	1.7
E837134 Dup	18.2	0.3	0.2	1.2	0.2	0.5	217	0.5	< 0.001	0.35	17.7	13.9	1.5
E837137 Orig													
E837137 Dup													
E837147 Orig													
E837147 Dup													
E837162 Orig													
E837162 Dup													
E837170 Orig	34.7	0.2	0.2	1.1	0.1	< 0.1	81.3	< 0.1	< 0.001	5.45	8.1	0.7	0.2
E837170 Dup	36.3	0.2	0.2	1.2	0.2	< 0.1	89.8	< 0.1	< 0.001	5.72	8.5	0.7	0.2
E837172 Orig													
E837172 Dup													
E837175 Orig	3.1	< 0.1	0.1	1.0	0.1	0.2	286	0.2	< 0.001	0.27	12.5	5.1	0.9
E837175 Dup	2.3	< 0.1	0.1	0.9	0.1	0.2	278	0.3	< 0.001	0.27	12.4	4.4	0.9
E837182 Orig													
E837182 Dup													
E837108 Orig													
E837108 Dup													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	0.1	0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.1	< 0.001	< 0.05	< 0.5	< 0.1	0.2
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.9	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank													
Method Blank													
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Method Blank													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													
Method Blank													





**Date Submitted:** 22-Sep-17  
**Invoice No.:** A17-10382  
**Invoice Date:** 08-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

49 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT      **A17-10382**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font. It is positioned above a horizontal line that separates it from the printed name below.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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## Results

## Activation Laboratories Ltd.

## Report: A17-10382

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E837001	25	< 0.5	< 0.01	0.14	0.17	0.03	3.41	0.1	3	7.3	59	0.09	< 0.1	5.8	< 0.1	< 0.1	< 0.1	60	< 0.05	0.14	0.4	< 0.05	< 0.02
E837002	28	< 0.5	< 0.01	0.15	0.11	0.02	4.08	0.1	2	4.8	62	0.08	< 0.1	6.3	< 0.1	< 0.1	< 0.1	60	< 0.05	0.10	0.4	< 0.05	< 0.02
E837003	21	< 0.5	0.01	0.16	0.14	0.03	3.46	< 0.1	3	4.4	149	0.10	< 0.1	6.9	< 0.1	< 0.1	< 0.1	60	< 0.05	0.25	0.4	< 0.05	< 0.02
E837004	23	< 0.5	0.01	0.15	0.16	0.02	3.06	< 0.1	2	6.4	141	0.06	< 0.1	8.5	< 0.1	< 0.1	< 0.1	90	< 0.05	0.27	0.3	< 0.05	< 0.02
E837005	24	< 0.5	0.01	0.17	0.12	0.02	3.34	< 0.1	2	6.8	123	0.10	< 0.1	29.6	< 0.1	< 0.1	< 0.1	70	< 0.05	0.27	0.4	< 0.05	< 0.02
E837006	28	< 0.5	0.01	0.19	0.15	0.02	3.64	0.1	3	11.2	61	0.36	< 0.1	157	< 0.1	< 0.1	< 0.1	100	< 0.05	0.41	0.8	< 0.05	< 0.02
E837007	28	2.7	0.20	0.20	1.04	0.22	2.88	0.3	15	19.1	346	0.50	0.6	20.6	0.4	0.3	0.1	130	< 0.05	1.11	2.7	0.20	0.04
E837008	36	< 0.5	0.02	0.25	0.21	0.04	4.16	0.2	4	23.0	291	0.15	0.2	6.0	< 0.1	< 0.1	< 0.1	90	< 0.05	0.20	0.7	< 0.05	< 0.02
E837009	20	< 0.5	0.02	0.21	0.26	0.04	3.72	0.2	5	5.0	261	0.33	0.1	3.7	< 0.1	< 0.1	< 0.1	80	< 0.05	0.18	1.3	< 0.05	< 0.02
E837010	15	5.7	1.50	1.19	5.04	1.75	2.75	< 0.1	87	73.7	552	3.20	1.4	27.0	1.3	1.2	0.5	60	1.04	18.8	14.3	0.60	1.06
E835101	33	< 0.5	0.02	0.20	0.24	0.04	3.38	0.1	4	9.1	249	0.38	0.1	4.8	< 0.1	< 0.1	< 0.1	100	< 0.05	0.18	1.1	0.05	< 0.02
E835102	22	0.8	0.05	0.16	0.47	0.07	3.81	0.3	7	10.3	697	0.38	0.1	9.3	0.3	0.2	< 0.1	70	< 0.05	0.45	1.5	0.13	0.06
E835103	16	< 0.5	0.01	0.16	0.21	0.03	3.75	0.2	5	5.6	253	0.28	0.1	4.7	0.1	< 0.1	< 0.1	40	< 0.05	0.14	1.0	< 0.05	< 0.02
E835104	14	0.7	0.03	0.17	0.40	0.06	4.01	0.3	11	7.8	364	0.58	0.3	7.4	0.4	0.2	0.1	60	< 0.05	0.37	2.6	0.20	0.03
E835105	15	< 0.5	0.02	0.09	0.42	0.03	3.16	0.6	8	10.4	137	0.26	0.2	29.6	0.5	0.1	0.2	90	0.10	0.32	1.5	0.32	< 0.02
E835106	13	0.5	0.02	0.09	0.53	0.04	2.76	0.7	11	10.6	250	2.15	0.3	27.2	0.7	0.1	0.3	100	0.11	0.47	1.9	0.45	< 0.02
E835107	17	0.6	0.03	0.13	0.80	0.06	4.85	0.4	15	17.1	60	0.36	0.1	93.4	1.4	0.3	0.5	180	0.12	0.39	5.0	0.79	0.03
E835108	25	< 0.5	0.02	0.13	0.17	0.02	4.58	0.1	3	5.2	85	0.11	< 0.1	25.5	0.2	< 0.1	< 0.1	90	< 0.05	0.13	1.0	0.10	< 0.02
E835109	33	< 0.5	0.02	0.14	0.14	0.03	4.33	0.1	2	4.0	88	0.07	< 0.1	7.0	< 0.1	< 0.1	< 0.1	100	< 0.05	0.14	0.4	< 0.05	< 0.02
E835110	31	34.8	0.35	0.77	3.43	1.69	2.64	1.1	206	20.9	1380	5.70	2.0	13.4	1.1	1.6	0.4	180	6.45	5.38	21.0	0.49	0.50
E835111	26	< 0.5	0.01	0.16	0.17	0.03	4.17	< 0.1	3	6.9	148	0.07	< 0.1	3.2	< 0.1	< 0.1	< 0.1	80	< 0.05	0.16	0.3	< 0.05	< 0.02
E835112	25	0.6	0.02	0.17	0.33	0.05	4.02	< 0.1	7	8.0	182	0.43	0.2	4.3	0.1	0.1	< 0.1	80	< 0.05	0.22	0.8	0.07	< 0.02
E835113	28	< 0.5	0.01	0.14	0.19	0.03	4.01	0.3	4	6.8	124	0.33	0.1	10.8	< 0.1	< 0.1	< 0.1	80	< 0.05	0.30	0.7	< 0.05	< 0.02
E835114	13	0.8	0.04	0.17	0.38	0.07	4.21	0.3	8	12.5	207	0.46	0.2	11.3	0.2	0.1	< 0.1	70	< 0.05	0.26	0.9	0.08	< 0.02
E835115	16	0.5	0.02	0.13	0.30	0.05	4.07	0.2	5	25.1	198	0.32	0.1	13.9	0.1	0.1	< 0.1	50	< 0.05	0.31	0.6	0.07	< 0.02
E835116	< 1	8.4	0.56	0.30	2.44	0.49	3.06	0.3	28	43.2	242	0.92	1.2	44.9	0.9	0.5	0.4	90	0.06	2.36	6.5	0.61	0.07
E835117	< 1	6.9	0.63	0.33	2.08	0.23	2.62	0.9	36	36.4	1060	1.37	0.2	49.8	0.5	0.3	0.2	120	0.07	0.74	44.6	0.29	0.09
E835119	19	0.7	0.04	0.17	0.30	0.05	4.97	0.2	20	12.4	133	0.25	0.3	44.4	0.6	< 0.1	0.2	60	< 0.05	0.21	3.1	0.27	< 0.02
E835120	< 1	20.5	2.70	0.23	6.90	1.73	1.01	< 0.1	21	7.0	236	1.68	3.8	2.0	0.5	1.1	0.2	40	< 0.05	1.74	4.4	0.52	< 0.02
E835121	18	0.5	0.03	0.16	0.26	0.06	5.03	0.2	6	7.6	155	0.19	0.2	10.6	0.2	< 0.1	< 0.1	70	< 0.05	0.24	0.7	0.08	< 0.02
E835122	19	< 0.5	0.02	0.14	0.22	0.04	4.34	0.1	5	6.9	254	0.24	0.1	5.3	0.1	< 0.1	< 0.1	90	< 0.05	0.18	0.7	< 0.05	< 0.02
E835123	26	< 0.5	0.02	0.15	0.19	0.03	4.01	0.2	5	5.8	162	0.17	< 0.1	2.7	< 0.1	< 0.1	< 0.1	80	< 0.05	0.10	0.4	< 0.05	< 0.02
E835124	15	3.7	0.33	0.18	1.67	0.35	3.44	0.6	21	21.4	288	0.84	0.4	33.1	0.8	0.5	0.3	190	0.07	1.63	4.1	0.51	0.06
E835125	21	0.9	0.05	0.19	0.47	0.07	3.35	0.4	7	21.1	298	0.45	0.2	3.8	0.2	0.2	< 0.1	70	< 0.05	0.58	1.4	0.09	< 0.02
E835126	16	0.5	0.03	0.20	0.47	0.04	2.86	0.4	5	5.4	200	0.51	< 0.1	2.7	< 0.1	< 0.1	< 0.1	50	< 0.05	0.27	1.1	0.05	< 0.02
E835127	< 1	9.4	0.26	0.24	1.89	0.46	2.22	0.4	25	47.3	2320	2.83	< 0.1	9.1	0.5	0.5	0.2	90	0.07	1.70	8.9	0.29	0.08
E835128	5	6.8	0.19	0.21	1.45	0.37	2.34	0.5	18	18.2	521	1.88	0.1	6.5	0.3	0.4	0.1	70	< 0.05	1.75	4.1	0.21	0.07
E835129	19	1.0	0.07	0.18	0.49	0.09	2.80	0.3	9	9.2	518	0.63	0.2	6.0	0.1	0.1	< 0.1	50	< 0.05	0.48	2.2	0.09	< 0.02
E835130	< 1	5.6	1.48	1.19	5.15	1.86	2.65	< 0.1	55	56.6	513	3.20	0.8	25.7	1.3	1.1	0.5	30	1.13	19.5	14.4	0.61	0.56
E835131	23	5.1	0.81	0.24	2.47	0.60	2.72	0.3	23	34.3	449	1.11	0.2	19.9	0.6	0.6	0.2	120	< 0.05	1.15	4.2	0.38	0.06
E835132	24	3.5	0.59	0.20	1.79	0.45	3.18	0.4	22	64.7	272	0.79	1.1	28.4	0.5	0.4	0.2	110	< 0.05	0.84	3.3	0.30	0.04
E835133	21	0.5	0.06	0.21	0.32	0.06	4.38	0.2	5	12.8	112	0.14	0.2	5.1	0.1	< 0.1	< 0.1	70	< 0.05	0.16	0.5	< 0.05	< 0.02
E835134	23	< 0.5	0.02	0.11	0.15	0.03	4.53	0.2	3	8.9	57	0.09	< 0.1	11.2	< 0.1	< 0.1	< 0.1	80	< 0.05	0.11	0.7	< 0.05	< 0.02

Results

Activation Laboratories Ltd.

Report: A17-10382

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E835135	21	< 0.5	0.02	0.10	0.21	0.04	4.25	< 0.1	3	17.6	254	0.10	0.1	26.2	0.1	< 0.1	< 0.1	70	< 0.05	0.22	1.4	< 0.05	< 0.02
E835136	12	0.6	0.04	0.11	0.82	0.06	4.75	0.8	12	35.6	240	0.34	0.3	108	1.0	0.2	0.4	80	0.16	0.31	4.4	0.57	0.03
E835137	21	< 0.5	0.02	0.19	0.28	0.04	4.67	0.2	5	9.2	229	0.41	0.1	15.2	0.2	0.1	< 0.1	80	< 0.05	0.24	1.6	0.10	0.02
E835138	< 1	22.4	0.28	0.40	3.88	0.86	1.63	0.2	48	50.8	140	1.97	0.3	21.4	1.0	1.1	0.4	80	0.12	3.15	4.3	0.65	0.16
E835139	20	3.9	0.13	0.22	1.05	0.23	3.15	0.3	13	15.1	533	0.67	0.5	5.9	0.3	0.3	0.1	110	< 0.05	1.30	2.3	0.16	0.04
E835140	13	19.5	2.65	0.19	5.83	1.58	0.98	< 0.1	22	9.6	236	1.52	7.0	1.8	0.6	1.1	0.2	40	< 0.05	1.70	5.9	0.41	< 0.02
GXR-1 Meas	< 1	7.8	0.04	0.21	2.09	0.04	0.92	2.7	84	13.5	845	23.9	0.4	41.1		1.1		3740	31.4	2.78	7.0	0.51	1350
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
GXR-1 Meas	< 1	8.1	0.04	0.22	2.11	0.04	0.90	2.6	82	25.2	881	23.7	0.4	39.7		1.1		3220	30.6	2.90	7.0	0.52	1320
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	10.8	0.56	1.63	6.46	2.67	0.97	0.2	88	34.5	150	2.99	1.2	38.2		2.1		180	3.31	2.66	13.5	1.18	18.0
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
GXR-4 Meas	< 1	10.8	0.55	1.64	6.30	3.53	0.94	0.3	87	38.3	152	2.88	1.2	39.9		2.0		160	3.27	2.48	13.2	1.23	17.8
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	15	32.9	1.62	0.89	6.49	1.57	0.79		83	57.7	861	4.51	1.5	33.5	2.5	2.9	0.9	60		3.61	16.5	1.05	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	19	37.0	1.65	1.06	7.35	2.38	0.94		93	79.0	902	4.85	1.7	35.1	3.6	2.9	1.3	60		4.06	18.0	1.41	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	33.8	0.09	0.59	> 10.0	1.70	0.16	< 0.1	103	46.5	965	5.17	1.8	23.5		1.0		100	0.22	4.22	11.7	0.58	0.16
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
GXR-6 Meas	< 1	33.6	0.09	0.56	> 10.0	1.83	0.15	< 0.1	106	51.2	1060	5.68	1.6	25.8		1.2		90	0.25	4.35	13.3	0.57	0.19
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.5							148	207				278							55.3	0.52	
DNC-1a Cert		5.2							148	270				247							57	0.59	
DNC-1a Meas		4.5							149	168				272							52.5	0.50	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		157						0.3	220	79.4			3.3	85.4	3.0	3.3	1.2			8.53	20.8	1.64	0.68
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
SBC-1 Meas		164						0.4	224	70.8			3.3	88.0	3.6	3.4	1.2			8.02	21.8	1.72	0.64
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.1	0.09	0.24	7.94	0.39	0.17		93	441	468	14.3	1.5	239	1.2	0.8	0.4			3.87	28.3	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		20.6	0.09	0.23	7.45	0.38	0.17		84	445	488	13.9	1.2	237	1.3	0.9	0.4			3.68	27.7	0.52	0.30
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		17.1						5.3	25	32.8			1.2	48.7	2.4	6.8	0.9	1250		1.86	12.1	1.17	1.04

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		16.8						4.6	24	31.7			3.1	48.6	2.6	6.5	0.9	1110		1.68	12.3	1.19	0.98
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E837001 Orig	25	< 0.5	< 0.01	0.14	0.17	0.03	3.41	0.1	3	7.3	59	0.09	< 0.1	5.8	< 0.1	< 0.1	< 0.1	60	< 0.05	0.14	0.4	< 0.05	< 0.02
E837001 Dup	26	< 0.5	< 0.01	0.14	0.15	0.03	3.43	< 0.1	3	26.3	50	0.09	< 0.1	6.0	< 0.1	< 0.1	< 0.1	70	< 0.05	0.16	0.4	< 0.05	< 0.02
E835103 Orig																							
E835103 Dup																							
E835111 Orig																							
E835111 Dup																							
E835115 Orig																							
E835115 Dup																							
E835130 Orig	< 1	5.6	1.48	1.19	5.15	1.86	2.65	< 0.1	55	56.6	513	3.20	0.8	25.7	1.3	1.1	0.5	30	1.13	19.5	14.4	0.61	0.56
E835130 Dup	< 1	5.4	1.45	1.17	5.19	1.99	2.60	< 0.1	41	51.3	503	3.18	0.7	26.4	1.1	1.1	0.5	30	1.14	19.6	14.6	0.60	0.76
E835132 Orig	24	3.5	0.59	0.20	1.79	0.45	3.18	0.4	22	64.7	272	0.79	1.1	28.4	0.5	0.4	0.2	110	< 0.05	0.84	3.3	0.30	0.04
E835132 Dup	4	4.0	0.64	0.21	1.98	0.49	3.27	0.5	23	22.9	269	0.86	0.5	29.9	0.5	0.5	0.2	70	< 0.05	0.98	3.7	0.32	0.04
E835139 Orig																							
E835139 Dup																							
Method Blank	21	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	17	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	10.0	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	16	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	9.5	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	17	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	5.5	2	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	23	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.1	2	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.5	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837001	0.6	13.3	0.5	3.0	1.1	0.7	3	0.3	0.33	< 0.1	< 1	0.1	< 0.1	42	1.0	1.7	0.2	0.7	0.2	0.1	< 0.1	0.1	5.9
E837002	0.8	8.2	0.2	1.7	0.8	0.6	3	0.2	0.24	< 0.1	< 1	0.1	< 0.1	47	0.8	1.4	0.2	0.8	0.1	0.1	< 0.1	< 0.1	6.3
E837003	0.5	10.7	0.4	2.1	1.1	0.5	3	0.3	1.06	< 0.1	< 1	< 0.1	< 0.1	59	0.8	1.4	0.2	0.6	0.1	0.1	< 0.1	< 0.1	6.5
E837004	0.4	3.7	0.4	5.2	1.1	0.6	2	0.3	0.28	< 0.1	< 1	< 0.1	< 0.1	57	0.7	1.3	0.2	0.6	0.2	0.1	< 0.1	< 0.1	2.1
E837005	0.4	6.5	0.4	7.3	0.9	0.5	3	0.6	0.28	< 0.1	< 1	0.2	< 0.1	78	0.7	1.1	0.2	0.6	0.1	0.1	< 0.1	< 0.1	4.9
E837006	0.7	8.8	0.3	16.6	1.0	1.0	4	0.3	0.50	< 0.1	< 1	0.7	< 0.1	111	1.1	1.8	0.3	1.2	0.1	0.2	< 0.1	0.2	20.0
E837007	0.9	69.5	2.2	12.7	8.3	4.3	24	1.5	1.32	< 0.1	< 1	0.2	< 0.1	135	9.0	15.8	1.8	7.0	1.1	0.9	0.1	0.8	27.6
E837008	0.6	43.0	0.5	23.3	1.5	1.0	7	0.3	4.30	< 0.1	< 1	0.1	< 0.1	86	1.4	2.6	0.3	1.4	0.3	0.2	< 0.1	0.2	9.3
E837009	0.7	29.4	0.7	2.8	1.8	1.1	5	1.0	2.67	< 0.1	< 1	0.2	< 0.1	77	1.7	3.1	0.3	1.5	0.1	0.2	< 0.1	0.2	4.1
E837010	0.1	54.2	14.6	7.2	420	11.9	54	0.1	2.20	< 0.1	< 1	< 0.1	< 0.1	51	3.7	8.3	1.2	5.8	1.6	2.2	0.3	2.2	35.4
E835101	1.1	29.1	0.5	23.4	1.6	1.1	5	0.4	2.08	< 0.1	< 1	< 0.1	< 0.1	65	1.6	2.8	0.4	1.5	0.3	0.3	< 0.1	0.2	6.9
E835102	1.3	20.8	0.9	6.1	2.9	2.6	8	0.7	4.04	< 0.1	< 1	0.1	< 0.1	95	5.2	8.4	1.0	4.0	0.5	0.6	< 0.1	0.4	19.7
E835103	0.8	21.6	0.5	3.6	1.3	1.1	5	0.4	1.75	< 0.1	< 1	0.1	< 0.1	52	1.7	3.1	0.4	1.4	0.2	0.2	< 0.1	0.2	6.6
E835104	1.3	15.1	0.9	8.2	2.6	4.1	13	0.7	0.66	< 0.1	< 1	0.3	< 0.1	84	11.0	18.1	2.0	7.9	1.2	1.1	0.1	0.7	29.2
E835105	1.3	29.0	0.5	6.9	1.5	6.3	8	0.4	0.89	< 0.1	< 1	0.5	< 0.1	87	13.6	15.7	2.6	10.3	1.4	1.5	0.2	0.9	137
E835106	1.6	56.8	0.5	135	1.9	9.3	11	0.5	0.89	< 0.1	< 1	0.6	< 0.1	137	18.6	25.9	3.8	15.7	2.6	2.3	0.3	1.5	146
E835107	4.5	5.7	0.8	21.2	2.2	18.5	8	0.5	0.96	< 0.1	< 1	1.2	< 0.1	129	41.6	28.9	7.3	28.6	3.7	3.7	0.4	2.4	261
E835108	1.3	8.7	0.4	12.3	1.0	2.4	4	0.2	1.91	< 0.1	< 1	0.7	< 0.1	87	4.2	3.8	0.8	3.1	0.5	0.5	< 0.1	0.4	39.3
E835109	0.7	12.9	0.5	6.4	1.1	0.8	3	0.3	0.55	< 0.1	< 1	0.1	< 0.1	61	1.3	1.8	0.3	1.0	0.2	0.2	< 0.1	0.1	8.2
E835110	14.1	150	15.4	1710	31.4	8.1	85	6.9	3.34	< 0.1	2	23.1	< 0.1	49	4.6	13.6	1.6	7.5	1.6	1.8	0.3	1.6	201
E835111	0.4	9.4	0.4	9.3	1.2	0.7	4	0.3	0.48	< 0.1	< 1	< 0.1	< 0.1	56	1.0	1.8	0.2	0.8	< 0.1	0.2	< 0.1	0.1	4.9
E835112	0.9	7.2	0.9	4.7	2.2	1.4	8	0.6	1.01	< 0.1	< 1	0.2	< 0.1	65	2.4	4.5	0.5	2.0	0.3	0.4	< 0.1	0.2	6.2
E835113	1.0	31.7	0.6	6.5	1.5	0.9	5	0.4	1.38	< 0.1	< 1	0.5	< 0.1	60	1.4	2.5	0.3	1.3	0.1	0.2	< 0.1	0.1	13.6
E835114	1.2	26.8	0.9	3.8	2.7	1.7	9	0.7	1.18	< 0.1	< 1	0.3	< 0.1	76	2.7	5.0	0.5	2.4	0.4	0.4	< 0.1	0.3	9.8
E835115	1.2	24.1	0.7	6.3	2.1	1.5	6	0.5	1.02	< 0.1	< 1	0.3	< 0.1	81	2.0	3.5	0.4	1.8	0.3	0.3	< 0.1	0.2	24.2
E835116	2.1	44.9	5.1	14.3	21.7	11.2	48	3.0	0.56	< 0.1	< 1	1.1	< 0.1	204	27.4	32.0	5.2	20.4	3.1	2.9	0.3	1.9	159
E835117	1.1	189	3.7	50.3	8.7	5.4	8	1.2	1.95	< 0.1	< 1	0.9	< 0.1	318	7.8	14.6	1.6	6.5	0.9	1.2	0.2	0.8	35.5
E835119	3.2	15.1	0.6	15.7	1.8	7.9	15	0.5	1.70	< 0.1	< 1	1.9	< 0.1	128	10.5	5.5	2.3	9.1	1.6	1.3	0.2	1.0	191
E835120	0.1	49.8	16.0	< 0.1	69.6	6.8	195	3.6	0.81	< 0.1	< 1	< 0.1	< 0.1	903	61.4	117	11.0	39.9	5.7	4.1	0.3	1.6	6.6
E835121	1.1	13.5	0.6	4.9	2.0	1.8	7	0.5	1.56	< 0.1	< 1	0.4	< 0.1	137	2.5	3.1	0.6	2.3	0.4	0.4	< 0.1	0.3	19.1
E835122	0.9	15.9	0.6	1.7	1.6	1.2	5	0.4	0.65	< 0.1	< 1	0.3	< 0.1	119	1.7	2.5	0.4	1.5	0.3	0.2	< 0.1	0.2	10.0
E835123	1.0	27.3	0.5	1.1	1.1	0.9	4	0.3	1.09	< 0.1	< 1	0.1	< 0.1	74	1.3	2.2	0.3	1.2	0.2	0.2	< 0.1	0.1	9.1
E835124	1.9	34.4	3.6	16.2	12.8	9.4	15	2.0	1.12	< 0.1	< 1	0.6	< 0.1	221	22.2	29.0	4.3	16.8	2.5	2.3	0.3	1.7	96.6
E835125	1.6	10.7	1.0	5.2	3.2	1.9	8	0.7	0.62	< 0.1	< 1	< 0.1	< 0.1	94	2.9	5.1	0.7	2.8	0.5	0.4	< 0.1	0.3	10.0
E835126	1.0	9.8	0.7	8.0	2.0	1.0	5	0.4	0.68	< 0.1	< 1	< 0.1	< 0.1	61	1.5	2.9	0.3	1.4	0.3	0.2	< 0.1	0.2	5.8
E835127	1.2	91.8	4.3	147	21.8	4.7	2	1.9	0.75	< 0.1	< 1	< 0.1	< 0.1	439	11.6	23.2	2.3	8.7	1.3	1.2	0.2	0.9	45.6
E835128	0.9	167	3.4	19.7	16.9	3.5	5	1.9	0.40	< 0.1	< 1	< 0.1	< 0.1	228	8.0	16.8	1.6	6.4	0.9	0.8	< 0.1	0.6	6.1
E835129	1.0	61.6	1.1	12.2	3.5	1.8	9	0.7	0.78	< 0.1	< 1	< 0.1	< 0.1	95	3.9	7.2	0.8	3.2	0.4	0.5	< 0.1	0.4	10.2
E835130	< 0.1	52.0	13.8	4.7	462	12.4	33	< 0.1	0.35	< 0.1	< 1	< 0.1	< 0.1	55	3.9	9.5	1.2	6.1	1.8	2.5	0.4	2.4	34.4
E835131	1.4	31.2	5.5	11.2	19.3	6.4	15	2.0	1.18	< 0.1	< 1	0.3	< 0.1	275	14.6	25.5	2.8	11.1	2.1	1.5	0.2	1.2	33.9
E835132	2.2	22.4	4.0	16.4	14.9	5.7	46	2.2	3.90	< 0.1	< 1	0.9	< 0.1	213	10.4	16.3	2.1	8.7	1.5	1.3	0.1	1.0	89.6
E835133	1.0	17.5	0.7	2.4	2.0	1.1	7	0.5	1.92	< 0.1	< 1	0.1	< 0.1	88	2.0	3.4	0.4	1.8	0.2	0.2	< 0.1	0.1	10.6
E835134	0.7	8.8	0.5	2.1	1.0	0.8	4	0.2	0.75	< 0.1	< 1	0.1	< 0.1	106	1.0	1.7	0.2	0.9	0.2	0.1	< 0.1	0.1	10.4

Results

Activation Laboratories Ltd.

Report: A17-10382

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835135	1.1	7.7	0.4	5.6	1.3	1.3	5	0.3	0.71	< 0.1	< 1	0.3	< 0.1	130	1.6	2.2	0.4	1.5	0.3	0.3	< 0.1	0.2	26.2
E835136	5.0	15.2	0.7	18.1	2.1	13.2	10	0.5	0.67	< 0.1	< 1	0.6	< 0.1	223	18.1	14.7	3.8	16.3	2.5	2.6	0.3	1.8	291
E835137	2.0	12.3	0.5	2.1	1.8	2.3	5	0.4	0.90	< 0.1	< 1	0.5	< 0.1	141	3.3	4.2	0.7	3.1	0.6	0.5	< 0.1	0.3	34.2
E835138	0.5	41.1	10.1	0.9	45.0	10.6	15	3.3	0.58	< 0.1	< 1	0.1	< 0.1	278	32.1	57.1	6.0	23.0	3.6	2.9	0.3	2.0	22.7
E835139	0.9	48.3	2.3	6.4	9.9	2.8	21	1.5	0.72	< 0.1	< 1	< 0.1	< 0.1	140	6.3	11.6	1.3	5.3	0.5	0.8	< 0.1	0.4	9.2
E835140	< 0.1	48.3	15.2	< 0.1	64.2	6.2	264	6.3	0.64	< 0.1	2	< 0.1	< 0.1	815	57.9	113	10.5	39.3	4.2	3.9	0.3	1.6	16.0
GXR-1 Meas	16.9	809	9.3	464	2.3	28.5	22	0.5	17.9	0.8	25	21.3	7.4	690	7.2	14.2		8.3	2.5	3.9	0.7	4.4	1160
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
GXR-1 Meas	15.1	805	7.5	440	2.2	27.3	19	0.6	17.7	0.7	26	26.0	8.2	705	7.1	13.9		8.4	2.7	3.8	0.6	4.2	1140
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.6	71.3	17.2	110	102	13.4	43	9.4	330	0.2	7	4.0	0.9	71	55.2	107		41.9	5.1	4.7	0.5	2.5	6170
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	4.9	72.7	16.2	104	115	12.4	38	8.9	318	0.2	7	4.0	0.8	99	54.4	104		39.5	6.1	4.5	0.5	2.4	5930
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		107	19.8	< 0.1	62.6		55	3.5			2	< 0.1		611	22.3	60.3		27.8	5.4	5.1	0.7	5.0	29.7
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		106	22.3	< 0.1	102		62	11.6			3	0.2		626	31.3	82.2		38.1	7.5	6.4	1.0	5.9	29.5
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	< 0.1	126	25.1	237	66.4	11.9	63	0.3	0.30	< 0.1	< 1	0.3	< 0.1	1490	12.0	32.8		12.2	1.8	2.1	0.3	2.2	67.4
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
GXR-6 Meas	0.4	148	24.1	234	62.5	11.5	56	< 0.1	0.22	< 0.1	< 1	0.3	< 0.1	1330	11.1	31.1		12.0	2.6	2.3	0.3	2.2	74.8
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		66.8	13.3		2.8	15.9	38	1.4				0.6		110	3.5			4.8					100
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		69.9	12.9		3.0	15.6	38	1.2				0.2		107	3.6			4.7					97.0
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		205	24.8	28.3	114	30.4	122	13.4	2.07		3	0.9		602	49.1	105	11.2	48.0	8.4	7.8	1.0	6.2	35.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		206	24.3	26.5	120	30.2	118	12.2	2.30		3	0.9		548	50.6	104	11.1	48.0	9.8	7.9	1.0	6.3	33.6
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		44.5	20.0	4.5	34.6	11.2	62	< 0.1	0.28	< 0.1	< 1	< 0.1		196	16.1	34.7	3.4	13.8	2.8	2.4	0.3	2.1	379
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas		44.3	19.5	4.7	33.5	10.5	46	0.1	0.21	< 0.1	< 1	< 0.1		188	15.8	34.0	3.3	13.8	2.7	2.4	0.3	2.0	375
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2		826	14.8		117	25.2	66	2.6	12.2					1100	45.4	97.3	9.5	37.4	6.7	5.8	0.7	4.4	245

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
SdAR-M2 (U.S.G.S.) Meas		829	13.4		99.1	23.8	105	3.0	11.7					1060	45.9	96.5	9.6	38.5	7.8	5.3	0.7	4.6	242
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E837001 Orig	0.6	13.3	0.5	3.0	1.1	0.7	3	0.3	0.33	< 0.1	< 1	0.1	< 0.1	42	1.0	1.7	0.2	0.7	0.2	0.1	< 0.1	0.1	5.9
E837001 Dup	0.6	12.5	0.4	2.3	1.2	0.6	4	0.3	0.56	< 0.1	< 1	0.1	< 0.1	42	1.0	1.8	0.2	0.8	0.2	0.1	< 0.1	0.1	6.6
E835103 Orig																							
E835103 Dup																							
E835111 Orig																							
E835111 Dup																							
E835115 Orig																							
E835115 Dup																							
E835130 Orig	< 0.1	52.0	13.8	4.7	462	12.4	33	< 0.1	0.35	< 0.1	< 1	< 0.1	< 0.1	55	3.9	9.5	1.2	6.1	1.8	2.5	0.4	2.4	34.4
E835130 Dup	0.1	50.8	13.9	5.0	486	12.4	28	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	53	4.0	9.3	1.2	6.3	1.6	2.5	0.3	2.3	33.8
E835132 Orig	2.2	22.4	4.0	16.4	14.9	5.7	46	2.2	3.90	< 0.1	< 1	0.9	< 0.1	213	10.4	16.3	2.1	8.7	1.5	1.3	0.1	1.0	89.6
E835132 Dup	2.2	24.4	4.5	16.6	16.0	6.1	23	2.1	3.86	< 0.1	4	0.9	< 0.1	228	11.4	18.3	2.3	9.1	1.6	1.4	0.2	1.1	94.0
E835139 Orig																							
E835139 Dup																							
Method Blank	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.1	0.2	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E837001	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	30.1	< 0.1	0.001	< 0.05	2.2	0.3	0.2	0.008
E837002	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	36.1	< 0.1	0.002	< 0.05	0.8	0.3	0.1	< 0.005
E837003	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35.2	< 0.1	0.003	< 0.05	< 0.5	0.3	0.1	0.006
E837004	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	34.9	< 0.1	< 0.001	< 0.05	< 0.5	0.3	0.1	< 0.005
E837005	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	37.1	< 0.1	< 0.001	< 0.05	< 0.5	0.3	< 0.1	0.010
E837006	< 0.1	< 0.1	0.1	< 0.1	< 0.1	42.7	0.2	0.002	0.09	< 0.5	0.4	0.2	< 0.005
E837007	< 0.1	< 0.1	0.4	< 0.1	< 0.1	60.9	0.2	0.003	0.14	2.7	3.0	1.2	0.005
E837008	< 0.1	< 0.1	0.1	< 0.1	< 0.1	50.3	< 0.1	0.003	< 0.05	< 0.5	0.6	0.3	0.008
E837009	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	41.8	< 0.1	0.002	< 0.05	1.6	0.5	0.3	< 0.005
E837010	< 0.1	0.2	1.2	0.1	< 0.1	82.5	< 0.1	< 0.001	5.75	8.3	0.6	0.2	3.37
E835101	< 0.1	< 0.1	0.1	< 0.1	< 0.1	49.8	< 0.1	0.002	0.05	0.8	0.6	1.0	< 0.005
E835102	< 0.1	< 0.1	0.2	< 0.1	< 0.1	56.0	0.1	0.001	0.07	1.5	1.4	0.8	< 0.005
E835103	< 0.1	< 0.1	0.1	< 0.1	< 0.1	39.6	< 0.1	0.001	< 0.05	0.6	0.5	0.3	0.020
E835104	< 0.1	< 0.1	0.4	< 0.1	< 0.1	44.9	0.1	0.002	0.08	0.9	2.3	2.2	< 0.005
E835105	< 0.1	< 0.1	0.6	< 0.1	< 0.1	32.1	0.2	0.002	0.14	0.6	2.1	0.9	0.007
E835106	< 0.1	0.1	0.8	0.1	< 0.1	26.5	0.4	0.004	0.27	0.9	3.0	1.0	0.008
E835107	< 0.1	0.2	1.4	0.2	< 0.1	44.8	0.3	0.012	0.22	1.0	5.4	5.8	0.024
E835108	< 0.1	< 0.1	0.2	< 0.1	< 0.1	37.6	< 0.1	0.004	0.11	< 0.5	0.9	0.6	0.009
E835109	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.0	< 0.1	0.002	< 0.05	< 0.5	0.4	0.2	0.009
E835110	< 0.1	0.2	1.3	0.2	0.4	91.3	1.9	< 0.001	2.17	30.0	1.2	1.2	3.52
E835111	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35.4	< 0.1	< 0.001	< 0.05	< 0.5	0.3	0.2	0.010
E835112	< 0.1	< 0.1	0.2	< 0.1	< 0.1	47.1	< 0.1	0.002	< 0.05	0.9	0.7	4.2	< 0.005
E835113	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	36.8	< 0.1	0.002	< 0.05	< 0.5	0.5	0.7	0.008
E835114	< 0.1	< 0.1	0.2	< 0.1	< 0.1	41.0	0.1	0.002	< 0.05	1.3	0.8	1.2	0.008
E835115	< 0.1	< 0.1	0.2	< 0.1	< 0.1	43.0	0.2	0.002	0.05	0.7	0.7	0.6	0.013
E835116	< 0.1	0.1	1.0	0.1	0.1	76.7	0.5	0.004	0.37	5.5	5.6	5.1	0.009
E835117	< 0.1	< 0.1	0.6	< 0.1	< 0.1	76.9	0.2	0.002	0.72	6.3	3.4	0.9	0.010
E835119	< 0.1	< 0.1	0.7	< 0.1	< 0.1	42.7	< 0.1	0.006	0.21	0.9	2.3	10.7	0.009
E835120	< 0.1	< 0.1	0.5	< 0.1	< 0.1	189	3.1	< 0.001	0.95	36.3	40.9	2.5	< 0.005
E835121	< 0.1	< 0.1	0.2	< 0.1	< 0.1	43.1	< 0.1	0.002	0.08	1.7	0.8	0.9	0.008
E835122	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.8	< 0.1	0.001	< 0.05	0.8	0.5	0.3	0.007
E835123	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	34.5	< 0.1	0.002	< 0.05	< 0.5	0.4	0.5	0.005
E835124	< 0.1	0.1	0.9	0.1	< 0.1	81.3	0.3	0.002	0.28	4.3	4.8	2.9	0.005
E835125	< 0.1	< 0.1	0.2	< 0.1	< 0.1	48.9	< 0.1	0.002	0.06	1.1	0.9	0.5	< 0.005
E835126	< 0.1	< 0.1	0.1	< 0.1	< 0.1	49.8	< 0.1	0.001	< 0.05	0.7	0.4	0.2	< 0.005
E835127	< 0.1	< 0.1	0.5	< 0.1	< 0.1	63.8	0.4	< 0.001	0.21	5.5	4.0	1.3	0.005
E835128	< 0.1	< 0.1	0.4	< 0.1	< 0.1	55.8	0.2	0.001	0.18	3.8	2.9	1.1	0.007
E835129	< 0.1	< 0.1	0.2	< 0.1	< 0.1	46.1	< 0.1	< 0.001	0.07	0.9	1.0	0.8	< 0.005
E835130	< 0.1	0.2	1.3	0.2	< 0.1	83.7	< 0.1	< 0.001	5.61	8.1	0.7	0.2	3.32
E835131	< 0.1	< 0.1	0.6	< 0.1	< 0.1	123	0.3	0.001	0.21	6.9	4.4	1.8	0.006
E835132	< 0.1	< 0.1	0.6	< 0.1	< 0.1	105	0.3	0.004	0.23	4.0	2.6	9.6	0.007
E835133	< 0.1	< 0.1	0.1	< 0.1	< 0.1	48.3	< 0.1	0.002	< 0.05	0.7	0.5	0.5	0.010
E835134	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	38.4	< 0.1	0.001	< 0.05	0.6	0.3	0.2	0.020



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E835135	< 0.1	< 0.1	0.1	< 0.1	< 0.1	33.6	< 0.1	0.003	0.06	0.5	0.6	0.2	< 0.005
E835136	< 0.1	0.2	1.3	0.2	< 0.1	37.2	0.2	0.018	0.17	1.0	3.0	1.6	0.008
E835137	< 0.1	< 0.1	0.2	< 0.1	< 0.1	46.4	< 0.1	0.002	0.06	1.6	1.1	1.6	< 0.005
E835138	< 0.1	0.1	1.1	0.2	< 0.1	66.0	0.5	< 0.001	0.39	10.8	9.8	1.9	< 0.005
E835139	< 0.1	< 0.1	0.3	< 0.1	0.1	54.2	0.1	0.001	0.10	2.3	2.4	0.9	0.026
E835140	< 0.1	< 0.1	0.5	< 0.1	0.3	145	10.6	< 0.001	0.91	34.8	35.2	1.7	0.011
GXR-1 Meas		0.3	2.2	0.3	< 0.1	285	133		0.43	723	2.5	32.9	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
GXR-1 Meas		0.3	2.2	0.3	< 0.1	289	146		0.39	718	2.5	32.6	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2240	
DH-1a Cert											910	2629	
DH-1a Meas											> 500	2270	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	1.1	0.1	0.6	203	35.1		3.20	46.8	18.5	5.6	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
GXR-4 Meas		0.1	1.0	0.1	0.6	203	34.7		3.05	46.9	18.5	5.5	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.4	2.9		0.1	151	< 0.1		0.59	22.9	8.3	2.3	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
SDC-1 Meas		0.5	3.3		0.5	166	< 0.1		0.66	24.8	10.9	2.7	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.7	0.2	< 0.1	37.7	0.1		2.15	96.2	5.0	1.4	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
GXR-6 Meas			1.7	0.3	< 0.1	37.6	< 0.1		2.35	104	4.8	1.4	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			2.0			143				5.9			
DNC-1a Cert			2.0			144				6.3			
DNC-1a Meas			2.0			142				5.5			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.4	3.4	0.4	0.7	174	1.6		0.85	34.1	15.7	5.6	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas		0.5	3.6	0.4	0.7	176	1.6		0.93	34.9	16.0	5.8	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	29.2	< 0.1		0.26	20.2	14.6	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	30.4	< 0.1		0.23	20.2	14.5	2.6	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	< 0.1	136	0.2			769	14.3	2.4	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	< 0.1	138	0.1			763	14.1	2.5	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.76
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.81
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.537
OREAS 218 Cert													0.531
OREAS 218 Meas													0.546
OREAS 218 Cert													0.531
E837001 Orig	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	30.1	< 0.1	0.001	< 0.05	2.2	0.3	0.2	
E837001 Dup	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	29.1	< 0.1	0.002	< 0.05	2.2	0.3	0.4	
E835103 Orig													0.020
E835103 Dup													0.008
E835111 Orig													0.010
E835111 Dup													0.008
E835115 Orig													0.013
E835115 Dup													0.009
E835130 Orig	< 0.1	0.2	1.3	0.2	< 0.1	83.7	< 0.1	< 0.001	5.61	8.1	0.7	0.2	
E835130 Dup	< 0.1	0.2	1.2	0.2	< 0.1	82.7	< 0.1	< 0.001	5.59	7.9	0.7	0.2	
E835132 Orig	< 0.1	< 0.1	0.6	< 0.1	< 0.1	105	0.3	0.004	0.23	4.0	2.6	9.6	
E835132 Dup	< 0.1	< 0.1	0.6	< 0.1	< 0.1	107	0.4	0.004	0.22	4.3	3.1	10.1	
E835139 Orig													0.026
E835139 Dup													< 0.005
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005



**Date Submitted:** 22-Sep-17  
**Invoice No.:** A17-10383  
**Invoice Date:** 08-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

139 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-10383**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and flourishes.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
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**Date Submitted:** 22-Sep-17  
**Invoice No.:** A17-10383  
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**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

139 Rock samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-4 Total Digestion ICP/MS

REPORT **A17-10383**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-10383

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837251	< 0.005	14	18.6	1.97	3.40	7.09	0.34	5.79	0.1	233	91.1	1650	10.3	1.9	79.0	3.0	0.6	1.1	30	< 0.05	1.35	43.8	0.84
E837252	0.009	3	31.0	1.26	8.12	3.85	0.07	8.32	0.1	144	1340	1720	9.51	0.8	345	1.1	0.2	0.4	40	0.27	0.62	55.2	0.42
E837253	< 0.005	< 1	7.6	1.39	5.76	3.84	0.18	7.78	0.1	164	583	1400	8.26	0.6	186	1.2	0.2	0.4	20	< 0.05	0.23	52.8	0.54
E837254	< 0.005	1	< 0.5	< 0.01	1.50	< 0.01	< 0.01	0.30	< 0.1	2	28.8	1120	24.5	< 0.1	1.5	0.4	2.1	0.1	30	< 0.05	0.33	1.1	0.20
E837255	< 0.005	< 1	5.4	0.84	1.35	3.27	0.09	2.64	< 0.1	159	62.0	763	5.12	1.0	42.3	1.4	0.4	0.5	30	< 0.05	0.18	20.0	0.42
E837256	0.048	< 1	4.6	> 3.00	3.27	6.40	0.07	3.14	0.2	236	26.4	1920	10.9	1.7	56.6	1.8	0.4	0.6	< 10	0.24	2.38	54.3	0.52
E837257	4.87	< 1	9.2	0.18	10.8	2.57	0.21	5.33	< 0.1	122	1660	1560	9.34	0.5	265	0.8	0.1	0.3	10	0.13	3.10	34.9	0.24
E837258	0.011	< 1	19.0	2.08	2.56	7.69	0.53	4.35	< 0.1	92	70.6	696	4.05	2.4	122	1.5	0.5	0.4	20	< 0.05	1.45	20.2	0.52
E837259	< 0.005	21	37.5	2.72	1.83	4.92	0.94	2.10	< 0.1	95	125	518	3.31	3.0	93.1	0.7	0.9	0.2	50	< 0.05	1.55	17.9	0.29
E837260	< 0.005	16	18.8	2.54	0.21	6.08	1.03	0.96	< 0.1	21	21.8	255	1.88	7.3	2.8	0.5	1.0	0.3	40	< 0.05	1.52	4.9	0.52
E837261	< 0.005	17	19.6	1.27	3.12	6.47	0.75	4.73	0.1	137	271	1030	5.66	2.0	91.2	1.3	0.5	0.5	90	< 0.05	2.02	34.5	0.54
E837262	0.010	< 1	15.3	0.74	6.33	4.87	0.21	5.11	0.4	188	287	1980	11.0	1.2	161	1.8	0.4	0.6	30	< 0.05	1.31	62.0	0.48
E837263	< 0.005	< 1	25.7	2.12	2.74	7.60	1.19	3.27	< 0.1	72	80.6	694	3.88	2.3	133	1.3	0.9	0.5	40	< 0.05	2.50	22.0	0.54
E837264	< 0.005	< 1	9.4	2.88	2.65	8.02	0.24	3.76	< 0.1	104	52.1	768	3.99	2.8	126	1.4	0.6	0.4	20	< 0.05	0.35	22.6	0.62
E837265	0.012	< 1	43.3	0.86	4.93	7.73	0.49	4.89	< 0.1	238	214	988	7.08	0.9	111	1.1	0.1	0.4	30	< 0.05	1.49	37.9	0.37
E837266	0.007	< 1	18.8	0.59	1.88	5.02	0.66	1.70	0.1	149	238	2880	8.89	1.5	98.4	1.6	0.4	0.5	30	< 0.05	2.25	27.5	0.49
E837267	0.020	< 1	4.9	0.87	8.45	3.09	0.05	7.71	0.2	150	1220	1400	9.01	0.8	339	1.0	0.4	0.4	< 10	< 0.05	0.67	43.4	0.44
E837268	< 0.005	< 1	13.6	1.87	2.94	7.44	0.21	5.25	0.3	345	108	1750	11.3	2.3	80.6	3.8	0.6	1.2	10	< 0.05	0.31	41.7	1.17
E837269	< 0.005	< 1	15.7	1.91	2.95	6.52	0.31	5.20	< 0.1	235	81.5	1610	10.1	2.0	87.3	3.0	0.6	1.0	< 10	< 0.05	0.52	44.0	0.87
E837270	> 10.0	25	15.6	0.14	1.35	1.90	0.27	1.93	0.1	29	47.1	555	20.7	0.6	24.4	0.7	0.7	0.3	190	4.66	8.02	7.9	0.37
E837271	< 0.005	13	13.3	0.90	7.31	3.11	0.13	8.76	0.1	192	1290	1540	9.25	0.8	246	1.3	0.4	0.4	60	< 0.05	1.95	63.7	0.56
E837272	< 0.005	5	37.5	1.51	3.57	6.85	0.36	8.07	< 0.1	175	462	1430	5.79	0.9	167	1.7	0.3	0.5	50	< 0.05	2.57	39.7	0.58
E837273	< 0.005	18	> 400	2.01	0.78	7.05	0.79	0.97	< 0.1	3	16.8	245	1.68	3.4	2.3	0.2	1.2	0.1	10	< 0.05	42.1	1.7	0.40
E837274	< 0.005	< 1	117	0.53	3.30	6.01	0.72	5.93	< 0.1	69	141	2080	7.03	1.5	26.0	0.5	0.6	0.2	20	0.12	15.4	11.4	0.27
E837275	0.006	< 1	72.4	0.35	3.69	5.76	0.56	6.97	0.2	199	313	2080	9.18	0.8	86.4	1.4	0.3	0.5	20	0.11	4.07	29.2	0.45
E837276	0.018	< 1	0.9	< 0.01	4.69	< 0.01	< 0.01	0.60	< 0.1	2	8.5	5640	24.6	< 0.1	0.9	0.2	0.6	< 0.1	30	< 0.05	< 0.05	2.0	0.06
E837277	0.007	< 1	8.6	> 3.00	2.82	6.91	0.09	2.54	0.2	248	13.1	1650	12.1	1.7	31.4	1.9	0.5	0.7	20	< 0.05	2.38	29.0	0.58
E837278	< 0.005	< 1	5.5	1.82	5.19	4.80	0.04	7.63	< 0.1	174	313	1690	8.97	0.8	148	1.5	0.3	0.5	< 10	< 0.05	0.11	54.4	0.53
E837279	< 0.005	5	7.8	2.13	4.64	6.11	0.04	6.24	0.4	233	98.6	1650	11.2	1.5	98.2	1.9	0.7	0.7	30	< 0.05	0.12	59.6	0.75
E837280	< 0.005	5	20.4	2.82	0.27	6.89	1.56	1.18	< 0.1	27	20.7	298	2.27	5.5	2.9	0.7	1.2	0.3	60	< 0.05	1.53	4.5	0.62
E837281	< 0.005	< 1	10.0	1.83	3.71	6.86	0.13	6.31	0.1	236	82.2	1640	11.2	2.0	68.1	3.2	0.6	1.0	30	< 0.05	0.13	40.8	0.83
E837282	< 0.005	< 1	10.3	1.73	3.68	6.90	0.15	6.78	0.1	217	75.5	1480	10.8	1.7	88.9	2.8	0.5	0.9	20	< 0.05	0.12	44.9	0.75
E837283	0.014	< 1	10.5	1.94	3.87	7.03	0.12	5.66	0.2	280	81.8	1670	10.6	2.1	90.5	2.4	0.6	0.8	< 10	< 0.05	0.26	48.7	0.78
E837284	0.043	< 1	< 0.5	< 0.01	0.63	0.03	< 0.01	0.07	< 0.1	3	11.9	1230	19.4	< 0.1	1.5	0.2	0.4	< 0.1	20	< 0.05	< 0.05	0.8	0.18
E837285	< 0.005	< 1	18.1	0.56	4.33	6.13	0.38	7.23	< 0.1	252	154	1830	7.33	0.9	95.9	1.8	0.3	0.6	20	< 0.05	0.89	37.2	0.61
E837286	0.034	14	23.4	1.10	3.73	6.49	0.86	5.26	< 0.1	80	173	1350	5.22	2.0	195	1.3	0.5	0.5	30	< 0.05	1.64	31.8	0.80
E837287	0.005	17	11.6	0.59	11.0	2.81	0.03	6.41	< 0.1	102	2110	1540	8.45	0.5	725	0.9	0.2	0.3	70	< 0.05	0.84	68.5	0.36
E837288	0.009	13	14.4	2.47	3.17	7.04	0.34	6.95	0.1	256	102	1700	9.45	2.4	78.1	3.1	0.6	1.0	40	< 0.05	0.63	44.5	0.86
E837289	< 0.005	2	13.1	2.10	3.95	7.53	0.25	5.99	0.2	279	98.8	1640	11.3	2.0	137	2.8	0.7	1.0	60	< 0.05	0.39	56.5	0.78
E837290	3.43	< 1	37.2	0.35	1.12	7.28	1.66	2.96	1.3	208	15.1	1310	6.16	2.0	12.3	1.7	1.6	0.6	130	6.28	7.92	21.6	0.94
E835077	< 0.005	< 1	16.4	1.33	6.47	7.58	0.23	6.91	< 0.1	198	287	1450	7.78	0.5	202	1.1	0.2	0.4	20	0.07	0.86	51.6	0.38
E835078	0.028	< 1	4.3	1.63	5.74	5.06	0.08	8.17	0.3	181	319	1740	10.0	1.1	159	1.6	0.6	0.5	20	0.05	0.43	52.1	0.56
E835079	< 0.005	< 1	9.8	0.95	2.63	7.60	0.45	7.79	< 0.1	237	395	2090	7.43	1.0	163	1.5	0.4	0.5	< 10	< 0.05	0.61	42.7	0.49

## Results

## Activation Laboratories Ltd.

## Report: A17-10383

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835080	< 0.005	< 1	19.1	2.76	0.19	6.05	3.34	0.95	< 0.1	20	24.4	243	1.62	6.6	1.9	0.6	1.0	0.2	< 10	< 0.05	1.86	2.9	0.47
E835081	< 0.005	< 1	59.3	0.57	2.52	5.76	0.65	4.69	< 0.1	67	394	1460	4.01	2.7	161	1.0	0.6	0.3	< 10	< 0.05	5.25	22.1	0.53
E835082	< 0.005	< 1	9.2	1.60	5.76	4.74	0.05	7.30	< 0.1	185	300	1640	9.45	1.1	162	1.4	0.4	0.5	< 10	< 0.05	0.24	55.2	0.62
E835083	< 0.005	5	0.8	< 0.01	2.65	< 0.01	< 0.01	0.16	< 0.1	7	9.3	5510	38.7	< 0.1	6.3	0.5	2.4	0.1	30	< 0.05	0.21	2.8	0.33
E835084	< 0.005	17	1.9	0.13	11.0	1.77	0.01	9.29	< 0.1	74	2320	1550	7.91	0.4	527	0.6	0.2	0.2	60	< 0.05	0.11	68.1	0.32
E835085	< 0.005	17	3.1	0.07	11.2	2.28	< 0.01	6.65	< 0.1	103	2560	1520	8.18	0.5	436	0.8	0.1	0.3	40	< 0.05	0.16	63.5	0.25
E835086	0.009	< 1	10.2	0.55	8.17	3.58	0.08	7.53	0.1	143	1440	1680	9.76	0.8	489	1.1	0.2	0.4	40	< 0.05	4.16	73.3	0.36
E835087	< 0.005	< 1	24.9	1.12	0.51	3.88	1.03	0.53	< 0.1	49	103	652	3.71	0.3	30.4	0.8	0.6	0.2	60	< 0.05	2.40	7.6	0.28
E835088	< 0.005	< 1	12.2	2.15	3.42	7.89	0.23	6.05	0.1	161	82.7	1180	6.97	2.3	42.3	1.7	0.7	0.6	40	< 0.05	0.90	41.2	0.72
E835089	< 0.005	< 1	6.7	0.87	7.75	3.66	0.04	7.95	< 0.1	178	760	1780	10.1	0.9	361	1.1	0.2	0.4	10	< 0.05	0.60	71.1	0.50
E835090	3.21	< 1	37.5	0.36	1.06	6.81	2.76	2.91	1.2	210	15.2	1360	6.08	2.0	13.4	1.6	1.6	0.6	90	6.63	7.57	22.0	0.91
E835091	0.055	< 1	4.7	0.13	3.41	1.62	0.02	1.49	0.2	79	169	1110	12.5	0.4	51.2	0.9	0.7	0.3	< 10	< 0.05	0.15	19.2	0.35
E835092	< 0.005	< 1	13.9	1.84	3.97	7.16	0.11	5.44	0.1	333	104	1380	10.6	2.2	88.3	2.8	0.6	1.0	< 10	< 0.05	0.20	44.6	0.79
E835093	0.012	< 1	5.7	0.69	6.89	3.85	0.07	10.1	0.4	168	670	2090	9.56	0.9	350	1.2	0.4	0.4	< 10	< 0.05	0.08	63.8	0.49
E835094	< 0.005	< 1	169	0.65	1.94	7.72	1.18	0.54	< 0.1	94	306	754	5.48	1.6	164	0.9	0.7	0.3	30	< 0.05	15.3	31.0	0.53
E835095	< 0.005	17	0.9	< 0.01	2.03	< 0.01	< 0.01	0.52	< 0.1	8	17.7	3590	37.0	< 0.1	2.3	1.2	3.4	0.4	30	< 0.05	0.36	1.8	1.19
E835096	0.005	14	14.9	1.70	5.83	7.23	0.15	7.04	0.1	192	422	1350	7.45	0.7	189	1.2	0.5	0.4	40	< 0.05	0.62	49.8	0.37
E835097	< 0.005	11	12.4	1.98	3.54	7.45	0.09	6.74	0.1	252	122	1470	9.87	1.9	117	2.8	1.1	0.9	20	< 0.05	0.11	49.7	0.82
E835098	< 0.005	< 1	17.6	1.01	3.09	6.01	0.20	4.88	0.2	152	88.8	1230	8.97	1.2	81.1	2.3	0.5	0.8	40	< 0.05	0.41	41.2	0.72
E835099	0.084	< 1	19.0	1.41	3.98	6.09	0.81	4.50	0.5	124	951	1990	9.61	1.5	40.0	2.3	0.4	0.8	60	0.21	1.25	13.6	0.86
E835100	< 0.005	< 1	17.2	2.33	0.19	5.74	3.23	0.85	0.5	18	21.4	215	1.50	1.2	1.9	0.5	0.9	0.2	20	< 0.05	1.56	3.7	0.44
E835401	< 0.005	< 1	6.7	0.79	8.05	3.01	0.03	7.21	0.1	161	920	1660	10.0	0.8	384	1.0	0.2	0.4	< 10	< 0.05	0.68	69.8	0.43
E835402	< 0.005	< 1	24.2	1.36	4.17	7.56	0.22	6.96	< 0.1	291	98.7	1540	9.12	0.8	71.9	2.1	0.2	0.7	30	0.10	1.29	37.2	0.54
E835403	< 0.005	< 1	1.6	0.09	11.9	2.60	< 0.01	5.07	< 0.1	122	1620	1320	8.42	0.5	597	0.7	0.1	0.2	20	< 0.05	0.06	63.5	0.19
E835404	0.015	14	6.0	1.63	3.03	3.92	0.10	2.50	< 0.1	113	284	844	7.83	1.2	92.9	1.1	0.5	0.4	40	< 0.05	0.74	19.3	0.44
E835405	< 0.005	< 1	6.1	0.76	7.02	3.29	0.10	8.02	0.1	138	1200	1610	9.20	0.8	359	1.1	0.2	0.4	30	< 0.05	1.91	63.5	0.42
E835406	< 0.005	< 1	9.9	1.80	2.96	7.16	0.30	7.63	0.2	264	80.9	1440	9.99	1.4	90.5	3.2	0.7	1.1	40	< 0.05	0.43	45.9	0.89
E835407	< 0.005	< 1	15.0	1.76	2.94	7.34	0.51	6.43	0.2	265	76.2	1890	11.0	1.9	62.0	3.0	0.6	1.1	20	< 0.05	12.6	33.9	0.88
E835408	0.010	< 1	25.8	1.90	4.50	7.67	0.53	6.24	0.2	279	81.8	1630	10.2	2.0	179	2.6	0.5	1.0	< 10	< 0.05	2.48	56.3	0.67
E835409	< 0.005	< 1	19.0	0.87	7.71	5.46	0.19	6.74	0.2	172	532	1490	7.44	0.8	290	1.1	0.3	0.3	< 10	< 0.05	0.46	54.3	0.35
E835410	2.98	< 1	36.9	0.35	1.07	7.17	2.73	2.87	1.0	208	14.4	1300	5.94	2.0	13.1	1.8	1.7	0.6	100	5.33	7.40	21.9	0.91
E835411	< 0.005	< 1	16.9	0.25	0.93	6.37	2.13	1.19	< 0.1	5	10.3	308	1.06	0.3	8.0	0.3	0.9	0.1	20	< 0.05	2.38	2.9	0.36
E835412	0.079	14	< 0.5	< 0.01	1.07	0.09	< 0.01	0.55	0.4	3	24.3	2540	13.6	< 0.1	1.9	0.5	0.8	0.2	30	< 0.05	0.26	1.1	0.31
E835413	0.010	21	< 0.5	< 0.01	0.64	0.08	0.01	0.30	< 0.1	3	35.8	1780	10.4	< 0.1	1.2	0.3	0.7	< 0.1	40	< 0.05	< 0.05	0.8	0.24
E835414	< 0.005	6	0.6	< 0.01	1.64	< 0.01	< 0.01	0.19	< 0.1	3	5.7	3190	37.5	< 0.1	1.4	0.7	2.4	0.2	60	< 0.05	0.09	2.5	0.57
E835415	< 0.005	< 1	11.0	1.95	2.77	7.50	0.14	5.76	0.2	248	72.2	1780	9.95	2.1	99.1	3.1	0.6	1.1	40	< 0.05	0.16	45.7	0.82
E835416	0.233	< 1	1.3	0.15	1.26	0.20	< 0.01	1.30	45.8	11	120	3440	17.7	< 0.1	14.6	0.7	2.7	0.2	40	0.57	0.26	3.1	0.74
E835417	0.005	< 1	6.5	0.28	1.66	3.21	0.30	2.93	0.2	51	100	774	11.9	1.5	154	0.7	0.3	0.3	20	0.25	1.17	49.6	0.31
E835418	< 0.005	< 1	16.1	1.65	5.21	6.27	0.07	7.94	0.3	193	349	1500	7.47	1.5	160	1.4	0.7	0.5	< 10	< 0.05	0.23	48.3	0.46
E835419	< 0.005	< 1	< 0.5	< 0.01	0.64	0.02	< 0.01	0.05	< 0.1	2	19.1	1550	13.0	< 0.1	2.5	< 0.1	0.4	< 0.1	< 10	< 0.05	< 0.05	0.9	0.07
E835420	< 0.005	< 1	20.8	2.76	0.25	6.19	3.46	1.05	0.2	21	30.7	293	2.19	0.5	3.0	0.8	1.1	0.3	140	< 0.05	1.57	275	0.61
E835421	0.013	< 1	< 0.5	< 0.01	1.26	0.04	< 0.01	0.18	< 0.1	3	29.0	940	17.4	< 0.1	1.2	0.5	0.9	0.1	20	< 0.05	0.15	1.9	0.22
E835422	0.005	14	0.7	< 0.01	1.65	< 0.01	< 0.01	0.13	< 0.1	6	14.3	3560	35.4	< 0.1	1.5	0.3	1.0	< 0.1	90	< 0.05	0.17	6.7	0.24

## Results

## Activation Laboratories Ltd.

## Report: A17-10383

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835423	< 0.005	18	8.6	0.58	4.43	6.86	0.33	9.48	0.2	273	421	2590	9.19	0.9	128	1.8	0.2	0.6	40	< 0.05	0.95	46.4	0.47
E835424	< 0.005	15	19.5	0.65	4.39	7.35	0.24	8.63	0.1	192	779	1830	5.82	1.3	387	1.5	0.4	0.5	50	< 0.05	0.71	69.2	0.53
E835425	< 0.005	< 1	35.8	0.75	4.43	7.42	0.84	7.47	0.1	269	193	2250	7.84	1.1	94.0	2.0	0.3	0.6	30	< 0.05	2.05	42.5	0.53
E835151	< 0.005	< 1	27.0	1.72	4.37	7.58	0.09	7.12	0.1	236	68.3	1400	7.83	0.8	64.3	2.0	0.2	0.6	60	< 0.05	0.38	34.5	0.53
E835152	0.007	< 1	7.4	0.23	12.0	2.76	0.02	5.98	< 0.1	97	1540	1540	7.33	0.4	787	0.6	0.1	0.2	< 10	0.08	0.33	57.8	0.21
E835153	0.008	< 1	8.4	2.23	3.47	6.24	0.09	3.97	0.1	252	28.8	1840	12.3	1.6	67.6	1.8	0.6	0.6	30	< 0.05	3.62	40.1	0.71
E835154	< 0.005	< 1	9.0	1.44	5.01	6.00	0.15	6.96	< 0.1	180	290	1450	6.93	1.3	135	1.5	0.4	0.5	< 10	< 0.05	0.46	45.0	0.42
E835155	0.011	< 1	8.9	0.39	6.23	3.31	0.08	4.26	< 0.1	108	436	2700	19.5	0.5	217	1.6	0.9	0.5	< 10	0.20	0.66	36.6	0.64
E835156	0.010	< 1	7.0	2.45	3.59	7.21	0.04	6.04	0.1	310	79.1	1550	10.6	2.4	86.8	2.8	0.6	1.0	< 10	< 0.05	0.07	43.8	0.83
E835157	< 0.005	< 1	21.1	0.65	7.89	5.59	0.35	7.25	< 0.1	166	738	1600	7.67	0.8	372	1.2	0.2	0.3	10	< 0.05	0.81	56.3	0.38
E835158	0.011	14	7.8	0.26	9.31	3.73	0.05	7.87	1.0	140	2250	1520	8.83	0.9	381	1.1	0.5	0.4	50	< 0.05	0.17	61.6	0.61
E835159	< 0.005	4	10.6	1.05	6.19	4.32	0.11	9.84	< 0.1	175	694	1940	10.4	0.8	230	1.6	0.4	0.5	60	< 0.05	0.18	59.5	0.51
E835160	< 0.005	< 1	19.9	2.70	0.21	6.26	2.91	0.95	< 0.1	20	19.4	268	1.92	0.9	3.9	0.6	1.0	0.2	50	< 0.05	2.00	5.4	0.49
E835161	0.009	< 1	5.7	0.09	12.1	2.61	0.01	5.16	0.2	97	1920	1750	10.2	0.6	672	0.9	0.2	0.3	10	< 0.05	0.32	71.9	0.23
E835162	0.005	< 1	30.6	1.96	3.22	7.82	0.40	7.58	0.5	292	74.6	1520	9.80	1.9	72.8	2.7	0.7	1.0	20	< 0.05	0.34	36.8	0.84
E835163	0.019	1	13.8	1.99	5.83	6.89	0.13	5.50	< 0.1	214	320	1420	8.05	1.5	130	1.5	0.4	0.5	10	< 0.05	0.33	48.9	0.49
E835164	0.010	< 1	1.3	0.04	1.55	0.24	0.01	0.34	0.1	11	36.6	1920	16.9	0.1	8.5	0.7	1.1	0.3	< 10	0.08	0.39	6.7	0.46
E835165	< 0.005	< 1	9.1	2.29	2.85	7.10	0.14	6.00	0.5	200	79.8	1840	8.45	1.5	107	3.0	0.5	1.0	20	< 0.05	0.20	50.2	0.92
E835166	< 0.005	13	11.1	2.14	3.45	6.10	0.03	4.99	0.2	354	119	1250	10.4	2.5	71.7	2.2	0.6	0.8	40	< 0.05	< 0.05	40.6	0.62
E835167	< 0.005	15	16.6	2.30	3.97	7.21	0.31	5.18	< 0.1	266	103	1550	10.6	2.2	90.8	3.1	0.5	1.1	40	< 0.05	0.72	48.3	0.87
E835168	< 0.005	11	8.0	1.84	2.97	6.57	0.13	6.40	0.1	248	138	1440	8.95	1.9	113	2.9	0.5	1.0	30	< 0.05	0.35	45.7	0.91
E835169	< 0.005	< 1	9.2	0.54	9.96	2.88	0.03	7.73	0.2	134	1600	1690	8.99	0.6	618	1.0	< 0.1	0.4	10	< 0.05	0.40	72.8	0.36
E835170	> 10.0	< 1	16.1	0.14	1.38	1.99	0.28	2.00	0.1	27	38.5	563	20.8	0.6	23.6	0.8	0.7	0.3	60	4.03	8.00	8.4	0.40
E835171	< 0.005	< 1	16.5	0.60	8.19	3.29	0.04	8.54	< 0.1	149	853	1810	9.57	0.7	372	1.0	0.4	0.4	< 10	< 0.05	0.10	59.1	0.42
E835172	< 0.005	< 1	10.0	0.81	8.11	3.49	0.05	8.58	0.1	168	861	1860	9.44	0.8	364	1.0	0.2	0.4	< 10	0.07	0.12	57.5	0.45
E835173	< 0.005	< 1	11.8	0.75	3.61	6.99	0.13	8.97	< 0.1	208	315	1750	5.90	0.9	195	1.6	0.3	0.5	< 10	< 0.05	1.14	47.8	0.48
E835174	< 0.005	< 1	2.6	0.08	10.3	2.09	0.02	7.89	< 0.1	128	1140	1530	8.21	0.6	565	0.7	< 0.1	0.3	20	0.13	< 0.05	74.4	0.28
E835175	< 0.005	< 1	48.3	0.03	0.18	2.96	0.02	0.04	< 0.1	26	49.0	1660	4.91	1.3	41.3	0.3	0.2	0.1	30	0.14	1.53	9.4	0.37
E835176	< 0.005	< 1	40.3	1.98	1.17	8.99	2.84	4.09	< 0.1	101	163	921	4.40	3.4	188	1.3	0.8	0.4	< 10	< 0.05	3.94	21.8	0.67
E835177	< 0.005	31	61.3	0.68	0.59	3.69	1.21	0.34	< 0.1	100	133	1050	5.39	3.0	8.4	0.9	0.3	0.3	30	< 0.05	4.88	3.3	0.36
E835178	< 0.005	1490	10.8	0.86	9.49	2.64	0.04	7.12	0.2	75	1740	1700	7.31	0.5	575	0.6	0.3	0.3	40	< 0.05	2.09	55.8	0.29
E835179	< 0.005	35	14.5	1.38	5.09	4.60	0.07	7.71	0.1	176	535	1670	10.1	1.0	161	1.3	0.4	0.5	40	< 0.05	0.12	46.4	0.50
E835180	< 0.005	8	19.5	2.71	0.23	6.40	2.42	1.00	< 0.1	21	24.7	300	2.18	1.5	3.2	0.6	1.1	0.3	30	< 0.05	1.62	6.6	0.60
E835181	0.008	< 1	12.9	> 3.00	2.47	6.53	0.12	5.68	0.1	194	5.9	1600	11.4	1.7	44.1	1.9	0.4	0.7	40	< 0.05	2.32	52.3	0.84
E835182	< 0.005	2	1.0	< 0.01	1.80	< 0.01	< 0.01	0.15	< 0.1	7	7.5	2620	33.9	< 0.1	3.9	0.7	1.9	0.2	40	< 0.05	0.15	2.1	0.44
E835183	< 0.005	2	16.5	2.05	5.10	7.66	0.09	5.36	0.1	324	132	1660	11.6	2.1	125	2.5	0.5	0.8	< 10	< 0.05	0.18	49.1	0.75
E835184	< 0.005	< 1	7.4	2.76	2.51	7.15	0.24	5.60	0.1	213	79.2	1700	8.86	2.2	97.9	3.0	0.7	1.1	10	< 0.05	0.66	45.5	0.89
E835185	< 0.005	2	35.9	2.11	2.88	6.95	0.50	5.28	0.2	316	227	2130	9.90	1.9	164	2.7	0.6	1.0	< 10	< 0.05	0.72	51.9	0.82
E835186	< 0.005	< 1	20.3	2.18	2.74	7.20	0.40	6.13	0.2	296	106	1980	9.72	2.2	107	3.2	0.6	1.1	< 10	< 0.05	1.00	47.8	0.89
E835187	< 0.005	< 1	11.5	0.54	11.3	2.85	0.03	7.13	< 0.1	120	1020	1480	8.15	0.5	642	0.7	0.1	0.2	< 10	< 0.05	1.18	69.4	0.33
E835188	< 0.005	18	50.8	0.33	3.32	4.92	0.44	5.88	0.1	172	775	1570	7.31	1.1	156	1.0	0.3	0.3	40	< 0.05	15.6	27.8	0.27
E835189	< 0.005	13	36.1	0.19	3.27	6.89	0.19	9.38	< 0.1	226	143	1640	5.65	0.4	29.6	0.9	0.7	0.3	40	0.08	2.62	18.6	0.17
E835190	3.06	< 1	38.3	0.37	1.10	7.22	1.91	3.00	1.2	216	16.5	1400	6.25	2.0	14.3	1.6	1.8	0.6	120	6.25	7.84	22.0	0.93

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
E835191	< 0.005	< 1	43.6	2.56	1.70	7.22	1.82	3.61	< 0.1	116	32.2	856	5.09	3.4	27.6	1.2	1.1	0.4	40	< 0.05	8.34	22.6	0.63	
E835192	< 0.005	< 1	79.2	0.14	0.25	4.87	1.14	0.09	< 0.1	129	1030	810	4.35	1.0	28.0	0.7	0.7	0.2	70	< 0.05	5.74	12.8	0.20	
E835193	< 0.005	< 1	27.0	0.27	3.94	5.80	0.66	5.95	0.1	168	259	2160	7.70	1.4	104	1.5	0.3	0.5	20	0.13	9.82	30.7	0.42	
E835194	< 0.005	< 1	49.6	1.13	0.49	3.07	0.42	0.55	< 0.1	31	62.3	519	5.96	3.0	9.5	2.1	1.4	0.7	20	< 0.05	3.01	3.3	0.72	
E835195	0.009	< 1	8.3	0.04	12.5	2.00	< 0.01	6.73	< 0.1	79	1890	2230	9.55	0.4	1190	0.7	0.4	0.3	< 10	< 0.05	0.70	94.3	0.24	
E835196	0.006	< 1	15.1	2.50	3.67	7.05	0.42	5.89	0.1	236	156	1510	9.17	1.8	108	2.4	0.5	0.9	< 10	< 0.05	1.09	44.6	0.67	
E835197	< 0.005	4	5.7	2.00	3.81	6.84	0.11	5.87	< 0.1	228	85.0	1250	9.92	2.0	69.7	3.0	0.6	1.0	40	< 0.05	0.17	40.3	0.80	
E835198	< 0.005	< 1	9.7	2.10	3.59	6.87	0.15	5.54	0.1	217	88.7	1590	9.87	1.7	109	2.7	0.5	0.9	30	< 0.05	0.23	47.5	0.79	
E835199	< 0.005	< 1	6.3	0.46	9.33	2.79	0.05	7.74	0.1	103	1520	1560	9.15	0.7	680	0.8	0.3	0.3	< 10	< 0.05	1.27	77.0	0.41	
E835200	< 0.005	< 1	18.7	2.59	0.22	5.78	2.83	0.96	< 0.1	22	22.3	284	2.11	1.4	3.5	0.6	1.0	0.2	40	< 0.05	1.76	9.0	0.55	
GXR-1 Meas		< 1	7.8	0.04	0.21	2.09	0.04	0.92	2.7	84	13.5	845	23.9	0.4	41.1			1.1		3740	31.4	2.78	7.0	0.51
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0			1.22		3900	31.0	3.00	8.20	0.690
GXR-1 Meas		< 1	8.1	0.04	0.22	2.11	0.04	0.90	2.6	82	25.2	881	23.7	0.4	39.7			1.1		3220	30.6	2.90	7.0	0.52
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0			1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas		< 1	10.8	0.56	1.63	6.46	2.67	0.97	0.2	88	34.5	150	2.99	1.2	38.2			2.1		180	3.31	2.66	13.5	1.18
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0			1.90		110	4.00	2.80	14.6	1.63
GXR-4 Meas		< 1	10.8	0.55	1.64	6.30	3.53	0.94	0.3	87	38.3	152	2.88	1.2	39.9			2.0		160	3.27	2.48	13.2	1.23
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0			1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		15	32.9	1.62	0.89	6.49	1.57	0.79		83	57.7	861	4.51	1.5	33.5	2.5	2.9	0.9	60		3.61	16.5	1.05	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas		19	37.0	1.65	1.06	7.35	2.38	0.94		93	79.0	902	4.85	1.7	35.1	3.6	2.9	1.3	60		4.06	18.0	1.41	
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas		< 1	33.8	0.09	0.59	> 10.0	1.70	0.16	< 0.1	103	46.5	965	5.17	1.8	23.5			1.0		100	0.22	4.22	11.7	0.58
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0			1.40		68.0	1.30	4.20	13.8	0.760
GXR-6 Meas		< 1	33.6	0.09	0.56	> 10.0	1.83	0.15	< 0.1	106	51.2	1060	5.68	1.6	25.8			1.2		90	0.25	4.35	13.3	0.57
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0			1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.5							148	207				278								55.3	0.52
DNC-1a Cert			5.2							148	270				247								57	0.59
DNC-1a Meas			4.5							149	168				272								52.5	0.50
DNC-1a Cert			5.2							148	270				247								57	0.59
SBC-1 Meas			157						0.3	220	79.4			3.3	85.4	3.0	3.3	1.2			8.53	20.8	1.64	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	
SBC-1 Meas			164						0.4	224	70.8			3.3	88.0	3.6	3.4	1.2			8.02	21.8	1.72	
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	
OREAS 45d (4-Acid) Meas			21.1	0.09	0.24	7.94	0.39	0.17		93	441	468	14.3	1.5	239	1.2	0.8	0.4			3.87	28.3	0.51	
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	
OREAS 45d (4-Acid) Meas			20.6	0.09	0.23	7.45	0.38	0.17		84	445	488	13.9	1.2	237	1.3	0.9	0.4			3.68	27.7	0.52	



	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			17.1						5.3	25	32.8			1.2	48.7	2.4	6.8	0.9	1250		1.86	12.1	1.17
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			16.8						4.6	24	31.7			3.1	48.6	2.6	6.5	0.9	1110		1.68	12.3	1.19
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 214 Meas																							
OREAS 214 Cert																							
OREAS 216 (Fire Assay) Meas																							
OREAS 216 (Fire Assay) Cert																							
OREAS 220 (Fire Assay) Meas	0.870																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.887																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.904																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.867																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 222(FIRE ASSAY) Meas	1.22																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.24																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.25																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.26																						
OREAS 222(FIRE ASSAY) Cert	1.22																						

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837260 Orig	< 0.005																						
E837260 Dup	< 0.005																						
E837271 Orig	< 0.005																						
E837271 Dup	< 0.005																						
E837278 Orig		< 1	5.5	1.82	5.19	4.80	0.04	7.63	< 0.1	174	313	1690	8.97	0.8	148	1.5	0.3	0.5	< 10	< 0.05	0.11	54.4	0.53
E837278 Dup		< 1	5.6	1.84	5.44	4.99	0.04	7.92	< 0.1	162	312	1680	9.04	0.8	148	1.5	0.3	0.5	< 10	< 0.05	0.10	55.5	0.54
E837280 Orig	< 0.005																						
E837280 Dup	< 0.005																						
E837283 Orig		< 1	10.5	1.94	3.87	7.03	0.12	5.66	0.2	280	81.8	1670	10.6	2.1	90.5	2.4	0.6	0.8	< 10	< 0.05	0.26	48.7	0.78
E837283 Dup		< 1	10.4	1.94	3.81	6.94	0.12	5.54	0.3	296	81.2	1640	10.4	2.1	85.7	2.5	0.6	0.8	< 10	< 0.05	0.29	47.6	0.78
E835081 Orig	< 0.005																						
E835081 Dup	< 0.005																						
E835086 Orig	0.009	< 1	10.2	0.55	8.17	3.58	0.08	7.53	0.1	143	1440	1680	9.76	0.8	489	1.1	0.2	0.4	40	< 0.05	4.16	73.3	0.36
E835086 Split	0.009	< 1	9.6	0.54	8.26	3.36	0.08	7.61	0.1	146	1220	1670	9.51	0.8	486	1.1	0.2	0.4	10	< 0.05	3.73	74.3	0.43
E835091 Orig	0.055																						
E835091 Dup	0.045																						
E835100 Orig		< 1	17.2	2.33	0.19	5.74	3.23	0.85	0.5	18	21.4	215	1.50	1.2	1.9	0.5	0.9	0.2	20	< 0.05	1.56	3.7	0.44
E835100 Dup		< 1	20.5	2.71	0.23	6.75	2.80	1.01	< 0.1	20	18.5	252	1.75	3.1	2.5	0.6	1.1	0.2	30	< 0.05	1.84	4.2	0.56
E835401 Orig	< 0.005																						
E835401 Dup	< 0.005																						
E835410 Orig		< 1	36.9	0.35	1.07	7.17	2.73	2.87	1.0	208	14.4	1300	5.94	2.0	13.1	1.8	1.7	0.6	100	5.33	7.40	21.9	0.91
E835410 Dup		< 1	36.1	0.34	1.02	6.90	2.49	2.83	1.1	203	14.0	1260	5.79	1.9	12.4	1.5	1.5	0.6	80	5.01	7.30	21.0	0.89
E835412 Orig		14	< 0.5	< 0.01	1.07	0.09	< 0.01	0.55	0.4	3	24.3	2540	13.6	< 0.1	1.9	0.5	0.8	0.2	30	< 0.05	0.26	1.1	0.31
E835412 Dup		19	< 0.5	< 0.01	1.07	0.03	< 0.01	0.56	< 0.1	2	58.7	2640	13.9	< 0.1	2.0	0.5	0.8	0.2	40	< 0.05	0.27	1.1	0.28
E835415 Orig	< 0.005																						
E835415 Dup	< 0.005																						
E835425 Orig	< 0.005																						
E835425 Dup	< 0.005																						
E835160 Orig	< 0.005																						
E835160 Dup	< 0.005																						
E835161 Orig	0.009	< 1	5.7	0.09	12.1	2.61	0.01	5.16	0.2	97	1920	1750	10.2	0.6	672	0.9	0.2	0.3	10	< 0.05	0.32	71.9	0.23
E835161 Split	0.010	< 1	5.4	0.09	11.3	2.47	< 0.01	4.90	0.3	88	1900	1620	9.64	0.6	641	0.7	0.1	0.3	< 10	< 0.05	0.36	68.9	0.22
E835164 Orig		< 1	1.3	0.04	1.55	0.24	0.01	0.34	0.1	11	36.6	1920	16.9	0.1	8.5	0.7	1.1	0.3	< 10	0.08	0.39	6.7	0.46
E835164 Dup		< 1	1.3	0.04	1.51	0.23	0.01	0.30	< 0.1	11	40.3	1840	16.3	0.1	7.5	0.6	1.2	0.2	30	0.07	0.32	6.4	0.46
E835174 Orig	< 0.005																						
E835174 Dup	< 0.005																						
E835184 Orig	< 0.005																						
E835184 Dup	< 0.005																						
E835189 Orig		13	36.1	0.19	3.27	6.89	0.19	9.38	< 0.1	226	143	1640	5.65	0.4	29.6	0.9	0.7	0.3	40	0.08	2.62	18.6	0.17
E835189 Dup		13	35.8	0.19	3.24	6.79	0.18	9.17	< 0.1	222	147	1620	5.62	0.4	29.1	1.0	0.6	0.3	50	0.09	2.69	18.4	0.17
E835199 Orig		< 1	6.3	0.46	9.33	2.79	0.05	7.74	0.1	103	1520	1560	9.15	0.7	680	0.8	0.3	0.3	< 10	< 0.05	1.27	77.0	0.41
E835199 Dup		< 1	6.3	0.45	9.03	2.71	0.05	7.74	0.1	104	1530	1580	8.98	0.6	678	0.9	0.2	0.3	< 10	< 0.05	1.23	76.3	0.44
Method Blank		21	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
Method Blank		17	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	10.0	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		16	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	9.5	6	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		17	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	5.5	2	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		23	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.1	2	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		19	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.5	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837251	0.02	< 0.1	111	16.5	< 0.1	9.6	27.7	72	< 0.1	< 0.05	< 0.1	< 1	0.1	< 0.1	128	3.1	8.3	1.1	6.4	2.3	3.8	0.6	4.6
E837252	0.16	0.2	89.2	8.1	157	1.0	10.2	27	< 0.1	0.16	< 0.1	< 1	0.2	< 0.1	17	1.7	4.5	0.6	3.6	1.1	1.6	0.2	1.8
E837253	0.02	0.2	99.3	8.5	< 0.1	4.6	11.3	21	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	113	2.6	6.1	0.8	4.6	1.1	1.8	0.3	2.0
E837254	< 0.02	< 0.1	8.8	0.3	1.6	0.6	5.2	2	< 0.1	0.56	< 0.1	< 1	1.7	< 0.1	6	1.7	2.4	0.3	1.2	0.4	0.4	< 0.1	0.4
E837255	< 0.02	< 0.1	55.0	7.8	< 0.1	1.8	12.6	36	< 0.1	0.28	< 0.1	< 1	< 0.1	< 0.1	23	2.0	4.8	0.6	3.6	0.9	1.8	0.3	2.1
E837256	0.15	1.1	75.0	12.3	1.9	2.4	16.2	58	2.5	0.56	< 0.1	< 1	1.6	0.1	200	3.1	7.4	1.0	5.2	1.9	2.5	0.4	3.1
E837257	0.37	0.5	88.7	6.4	6.0	7.5	7.2	18	0.9	0.43	< 0.1	< 1	1.0	< 0.1	58	0.8	2.5	0.4	2.5	0.7	1.1	0.2	1.3
E837258	0.12	< 0.1	57.5	14.9	< 0.1	18.0	12.4	95	1.1	0.38	< 0.1	< 1	< 0.1	< 0.1	122	7.1	14.5	1.5	6.6	1.6	2.0	0.3	2.1
E837259	0.07	0.2	63.7	16.1	2.9	15.9	4.6	111	5.6	0.66	< 0.1	1	0.1	< 0.1	238	4.1	11.7	1.1	4.8	0.8	0.9	0.2	1.0
E837260	< 0.02	0.2	48.6	15.5	< 0.1	57.3	7.1	259	6.7	1.79	< 0.1	1	< 0.1	< 0.1	753	64.7	128	12.1	44.1	5.7	4.2	0.4	1.7
E837261	0.05	0.2	67.9	12.9	2.0	33.4	12.7	77	0.4	0.37	< 0.1	< 1	< 0.1	< 0.1	326	9.6	19.9	2.0	8.1	2.1	2.1	0.3	2.2
E837262	0.02	0.5	174	11.1	< 0.1	8.1	15.8	46	< 0.1	0.22	< 0.1	< 1	0.2	< 0.1	168	3.0	7.6	1.1	5.9	1.6	2.5	0.4	2.8
E837263	0.10	< 0.1	75.3	14.8	0.3	48.2	11.9	87	0.2	0.32	< 0.1	< 1	0.1	< 0.1	353	9.6	21.0	2.2	8.7	1.7	2.0	0.3	1.9
E837264	0.03	< 0.1	65.1	15.2	< 0.1	6.5	12.3	106	1.2	0.42	< 0.1	< 1	< 0.1	< 0.1	81	11.3	26.6	2.6	10.7	2.4	2.3	0.3	2.1
E837265	0.06	< 0.1	84.9	14.6	14.1	16.1	9.9	30	0.6	0.24	< 0.1	< 1	< 0.1	< 0.1	53	2.2	4.6	0.6	3.2	1.0	1.5	0.3	1.7
E837266	0.05	< 0.1	104	11.1	111	24.7	13.7	54	2.4	1.92	< 0.1	< 1	0.5	< 0.1	151	6.5	13.0	1.4	6.2	1.3	1.8	0.3	2.3
E837267	0.24	0.3	104	7.9	2320	1.2	9.3	28	1.3	0.57	< 0.1	< 1	3.5	0.3	39	1.6	3.9	0.6	3.3	0.9	1.5	0.3	1.8
E837268	0.06	0.2	209	17.7	3.3	4.5	31.0	81	1.6	0.27	0.1	< 1	< 0.1	< 0.1	53	6.0	12.2	1.6	7.6	2.7	4.1	0.7	5.4
E837269	0.02	< 0.1	132	15.2	< 0.1	6.7	25.3	72	0.8	0.10	< 0.1	< 1	< 0.1	< 0.1	152	3.0	8.9	1.2	6.4	2.1	3.6	0.6	4.7
E837270	1.23	1.1	32.8	6.0	9130	14.5	7.6	31	1.5	4.06	< 0.1	5	2.6	0.5	46	6.6	13.3	1.4	6.0	1.2	1.2	0.2	1.2
E837271	0.02	0.2	63.3	6.5	0.8	6.2	11.2	26	0.6	0.29	< 0.1	< 1	< 0.1	< 0.1	195	2.4	5.4	0.8	4.2	1.2	1.9	0.3	1.9
E837272	0.14	0.2	57.5	12.6	0.3	5.5	15.1	32	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	45	5.3	10.0	1.2	5.7	1.6	2.1	0.3	2.7
E837273	0.10	< 0.1	41.9	15.9	0.4	30.2	3.0	120	4.0	1.31	< 0.1	< 1	< 0.1	< 0.1	112	16.1	27.8	2.6	9.3	1.3	1.0	0.1	0.6
E837274	0.82	0.5	49.5	11.9	0.3	94.1	4.6	57	1.9	1.45	< 0.1	4	0.1	< 0.1	56	3.0	5.7	0.6	2.6	0.5	0.7	0.1	0.7
E837275	0.44	0.4	97.6	11.4	2.0	12.7	11.9	26	1.7	0.76	< 0.1	< 1	0.3	< 0.1	57	3.4	6.7	0.8	4.1	1.1	1.7	0.3	2.1
E837276	< 0.02	0.3	45.2	0.2	1.1	< 0.2	2.0	2	< 0.1	0.14	< 0.1	< 1	3.7	< 0.1	6	0.6	0.9	< 0.1	0.5	0.1	0.1	< 0.1	0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837277	0.06	< 0.1	142	15.0	4.8	3.5	17.0	64	1.3	0.19	< 0.1	< 1	0.1	< 0.1	218	2.5	6.3	0.8	4.6	1.5	2.4	0.4	3.0
E837278	< 0.02	< 0.1	94.9	9.4	< 0.1	0.6	12.6	25	0.7	0.13	< 0.1	< 1	0.1	< 0.1	36	3.3	7.5	1.1	5.4	1.3	2.2	0.3	2.3
E837279	0.07	0.5	101	14.0	< 0.1	0.4	17.9	57	0.1	0.14	< 0.1	< 1	0.1	< 0.1	25	3.9	9.4	1.3	6.9	2.0	3.0	0.4	3.1
E837280	< 0.02	0.3	60.1	16.2	< 0.1	73.8	8.7	268	6.2	2.03	< 0.1	< 1	< 0.1	< 0.1	906	77.1	155	14.6	57.6	7.0	5.3	0.4	2.1
E837281	0.03	< 0.1	142	18.0	< 0.1	1.1	28.2	75	< 0.1	0.08	< 0.1	< 1	0.1	< 0.1	46	2.5	5.9	0.8	5.3	2.0	3.8	0.6	4.8
E837282	< 0.02	< 0.1	130	17.0	< 0.1	1.5	25.7	64	0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	42	2.6	7.0	0.9	5.3	1.9	3.2	0.6	4.3
E837283	< 0.02	< 0.1	125	16.9	1.5	2.6	22.3	81	1.1	0.37	< 0.1	< 1	< 0.1	< 0.1	22	5.1	12.6	1.6	8.4	2.3	3.2	0.5	3.9
E837284	0.13	0.4	9.0	0.5	< 0.1	< 0.2	2.5	2	< 0.1	0.68	< 0.1	< 1	1.2	0.1	3	1.4	2.7	0.3	1.3	0.2	0.3	< 0.1	0.4
E837285	0.06	0.1	69.5	12.8	< 0.1	9.4	16.4	32	0.6	0.45	< 0.1	< 1	< 0.1	< 0.1	49	1.7	4.8	0.7	4.1	1.2	2.2	0.4	3.0
E837286	0.06	< 0.1	86.1	13.4	91.6	26.0	13.0	81	0.2	0.23	< 0.1	< 1	< 0.1	< 0.1	98	15.2	31.5	3.5	14.1	2.6	2.5	0.3	2.4
E837287	0.07	< 0.1	89.2	6.6	213	1.6	8.5	20	1.0	0.27	< 0.1	< 1	2.8	< 0.1	20	1.5	3.8	0.5	3.0	0.8	1.2	0.2	1.4
E837288	< 0.02	< 0.1	110	16.5	2.3	10.0	28.5	92	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	129	6.1	14.5	1.9	9.8	2.3	3.8	0.7	5.1
E837289	< 0.02	< 0.1	131	17.5	< 0.1	5.4	27.2	78	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	75	5.6	13.4	1.8	9.0	2.8	3.7	0.6	4.6
E837290	0.51	14.0	151	15.9	1640	74.6	15.6	81	6.2	3.35	< 0.1	2	23.1	< 0.1	31	15.7	35.4	4.3	19.1	3.6	3.6	0.5	2.9
E835077	0.02	< 0.1	72.0	11.9	1.2	9.7	10.7	19	0.6	0.37	< 0.1	< 1	0.3	< 0.1	37	1.5	4.0	0.6	3.2	0.9	1.3	0.2	1.8
E835078	0.14	< 0.1	112	12.0	2.8	1.6	14.6	45	< 0.1	< 0.05	< 0.1	< 1	0.1	< 0.1	51	3.1	7.5	1.1	5.6	1.3	2.4	0.3	2.6
E835079	0.04	0.1	76.4	13.9	2.0	11.3	14.2	39	0.7	0.74	< 0.1	< 1	< 0.1	< 0.1	72	2.5	6.4	0.8	4.9	1.3	2.2	0.3	2.5
E835080	< 0.02	< 0.1	43.6	13.8	< 0.1	96.2	6.8	256	5.4	2.18	< 0.1	< 1	< 0.1	< 0.1	923	56.3	112	10.3	36.1	4.6	3.6	0.3	1.6
E835081	0.34	< 0.1	51.9	12.1	< 0.1	26.0	10.5	107	4.6	4.22	< 0.1	< 1	0.1	< 0.1	134	15.3	31.3	3.2	11.8	2.0	2.3	0.3	1.8
E835082	< 0.02	< 0.1	103	11.3	0.4	1.0	13.9	42	0.4	0.16	< 0.1	< 1	0.1	< 0.1	25	2.3	5.9	0.8	4.7	1.5	2.2	0.3	2.4
E835083	0.03	< 0.1	29.5	0.7	138	1.2	4.8	3	0.2	0.28	< 0.1	< 1	7.0	< 0.1	5	6.5	10.5	1.0	3.6	0.4	0.6	< 0.1	0.6
E835084	0.02	0.1	56.8	4.8	277	0.2	5.7	14	0.8	0.31	< 0.1	< 1	2.3	< 0.1	5	1.2	2.9	0.4	2.1	0.6	1.0	0.2	1.0
E835085	< 0.02	< 0.1	85.8	6.2	80.0	0.2	6.6	18	< 0.1	0.15	< 0.1	< 1	0.2	< 0.1	9	1.1	2.9	0.4	2.6	0.9	1.1	0.2	1.3
E835086	0.02	< 0.1	99.4	8.6	39.6	4.4	9.8	28	< 0.1	0.13	< 0.1	< 1	0.4	< 0.1	60	2.0	4.9	0.7	3.8	1.2	1.8	0.3	1.9
E835087	0.12	< 0.1	43.5	7.7	14.2	35.7	6.8	23	2.6	2.58	< 0.1	< 1	0.4	< 0.1	272	8.1	17.2	1.7	6.6	0.9	1.0	0.1	1.2
E835088	0.04	< 0.1	99.0	16.7	< 0.1	10.1	16.0	87	0.3	0.22	< 0.1	< 1	0.2	< 0.1	44	11.4	23.4	2.5	11.3	2.0	2.8	0.4	2.9
E835089	< 0.02	< 0.1	102	9.4	3.3	0.8	10.6	29	0.4	0.24	< 0.1	< 1	0.8	< 0.1	18	1.9	5.4	0.8	4.4	1.3	1.9	0.3	2.0
E835090	0.50	15.1	155	16.1	1560	86.6	14.8	77	6.7	3.88	< 0.1	2	22.1	0.1	32	13.4	32.4	3.8	18.5	3.0	3.5	0.4	2.6
E835091	0.09	0.2	86.1	6.5	38.5	0.4	7.6	14	0.7	1.94	0.1	1	1.0	0.2	19	2.3	4.8	0.6	2.8	0.9	1.3	0.2	1.4
E835092	< 0.02	< 0.1	116	17.3	4.3	1.6	27.3	81	3.1	0.44	< 0.1	< 1	0.1	< 0.1	22	4.2	10.9	1.5	7.7	2.3	3.3	0.6	4.6
E835093	0.04	< 0.1	109	9.6	106	0.6	12.0	35	0.5	0.20	< 0.1	< 1	0.5	< 0.1	31	2.8	6.9	0.9	4.9	1.4	1.9	0.3	2.2
E835094	0.15	< 0.1	67.3	16.6	0.9	39.6	8.6	63	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	133	12.2	23.5	2.4	9.9	1.3	1.8	0.2	1.6
E835095	< 0.02	< 0.1	34.7	1.2	7.4	1.2	11.8	3	0.3	0.25	< 0.1	< 1	9.1	< 0.1	14	5.6	13.0	1.5	7.3	1.7	1.9	0.3	1.9
E835096	0.02	< 0.1	73.6	12.0	9.3	3.3	11.0	23	0.2	0.12	< 0.1	< 1	0.3	< 0.1	28	1.6	4.3	0.6	3.2	1.2	1.5	0.2	1.9
E835097	< 0.02	< 0.1	114	16.5	< 0.1	0.5	24.9	70	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	110	4.8	11.3	1.5	8.4	1.8	3.4	0.5	4.0
E835098	0.03	< 0.1	125	15.7	< 0.1	7.6	21.5	46	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	49	5.3	11.9	1.5	7.9	2.2	3.1	0.5	3.7
E835099	0.43	2.0	470	22.4	2.4	28.4	20.2	53	0.2	0.23	0.6	2	0.2	< 0.1	184	18.5	35.9	3.5	14.3	2.7	3.1	0.5	3.5
E835100	< 0.02	< 0.1	37.2	11.7	< 0.1	104	5.9	112	2.3	1.56	< 0.1	< 1	< 0.1	< 0.1	706	53.7	100	9.6	38.9	4.8	3.5	0.3	1.4
E835401	< 0.02	< 0.1	110	10.0	1.3	1.4	9.9	30	0.4	0.37	< 0.1	< 1	0.6	< 0.1	14	1.8	4.6	0.7	3.7	1.5	1.7	0.2	1.9
E835402	0.27	0.3	102	16.1	8.0	7.4	19.6	29	1.1	0.59	< 0.1	< 1	0.2	< 0.1	61	1.6	4.4	0.6	3.9	1.4	2.2	0.4	3.2
E835403	0.15	< 0.1	75.9	6.9	10.1	0.2	6.5	17	0.6	0.21	< 0.1	< 1	0.3	< 0.1	3	0.7	2.3	0.4	2.1	0.8	1.0	0.2	1.2
E835404	0.04	0.7	47.4	9.2	22.1	3.0	10.6	45	1.8	1.27	< 0.1	< 1	0.6	< 0.1	80	7.1	13.7	1.5	6.5	1.1	1.5	0.2	1.6
E835405	0.04	0.1	101	8.7	20.4	3.6	9.5	30	0.1	0.14	< 0.1	< 1	0.2	< 0.1	89	1.4	3.9	0.6	3.3	1.1	1.6	0.2	1.9

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835406	< 0.02	< 0.1	112	17.1	< 0.1	5.6	26.5	51	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	144	6.3	15.3	1.9	9.7	3.0	3.6	0.6	4.6
E835407	0.69	< 0.1	133	16.8	< 0.1	23.1	27.5	73	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	259	5.8	12.8	1.6	7.9	2.3	3.7	0.6	4.3
E835408	< 0.02	< 0.1	116	15.5	2.0	16.5	24.8	73	2.0	0.24	< 0.1	< 1	0.2	< 0.1	142	5.1	12.3	1.6	8.5	2.1	3.3	0.5	4.0
E835409	< 0.02	< 0.1	79.0	10.4	9.4	7.7	10.3	28	1.3	0.23	< 0.1	< 1	0.8	< 0.1	43	2.8	6.1	0.7	3.7	1.2	1.5	0.2	1.6
E835410	0.50	14.3	157	16.0	1430	92.1	15.4	78	6.0	3.16	< 0.1	2	23.1	0.1	28	14.4	34.1	4.1	19.1	3.3	3.6	0.4	2.9
E835411	< 0.02	< 0.1	23.5	11.9	0.4	49.3	3.4	21	1.2	1.00	< 0.1	< 1	0.1	< 0.1	271	12.8	21.5	1.9	6.9	1.1	1.0	< 0.1	0.6
E835412	0.03	< 0.1	21.1	0.4	96.8	0.4	5.1	1	< 0.1	0.96	< 0.1	< 1	1.0	< 0.1	5	1.6	3.0	0.3	1.7	0.2	0.5	< 0.1	0.7
E835413	0.03	< 0.1	6.8	0.5	11.6	0.4	4.0	2	0.2	1.22	< 0.1	< 1	0.8	< 0.1	6	2.0	4.5	0.4	1.7	0.3	0.5	< 0.1	0.4
E835414	< 0.02	< 0.1	11.9	0.4	6.0	0.9	7.6	3	0.2	0.47	< 0.1	< 1	2.3	< 0.1	18	4.6	8.1	0.8	3.6	0.5	1.0	0.1	1.0
E835415	< 0.02	< 0.1	137	17.9	< 0.1	1.4	29.6	77	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	48	5.0	12.1	1.6	8.7	2.2	4.0	0.6	4.9
E835416	0.59	0.7	878	1.2	40.0	1.0	6.6	3	0.3	0.93	< 0.1	< 1	1.8	0.6	27	3.1	6.4	0.8	3.3	0.7	1.0	0.1	1.0
E835417	1.22	1.1	32.9	6.8	1.0	8.2	7.2	57	2.2	3.74	< 0.1	< 1	0.5	0.1	24	7.5	14.9	1.5	6.7	1.2	1.2	0.2	1.1
E835418	0.02	0.1	80.0	12.4	7.2	2.0	12.9	56	2.6	0.57	< 0.1	< 1	1.6	< 0.1	34	7.1	14.1	1.6	6.7	1.7	1.8	0.3	2.2
E835419	< 0.02	0.3	10.4	0.3	1.6	< 0.2	1.2	2	< 0.1	0.97	< 0.1	< 1	0.6	< 0.1	< 1	0.9	1.2	0.1	0.5	0.1	0.2	< 0.1	0.1
E835420	< 0.02	< 0.1	54.0	14.4	< 0.1	109	8.7	48	0.2	1.92	< 0.1	< 1	< 0.1	< 0.1	822	73.1	137	13.7	51.5	6.8	5.0	0.4	2.1
E835421	< 0.02	< 0.1	4.4	0.6	0.9	0.7	4.4	2	0.1	0.75	< 0.1	< 1	0.7	< 0.1	7	2.0	3.7	0.4	1.6	0.6	0.5	< 0.1	0.7
E835422	< 0.02	< 0.1	21.1	0.7	1.5	1.1	3.3	2	0.2	0.42	< 0.1	< 1	2.8	< 0.1	8	2.9	4.9	0.4	1.7	0.4	0.5	< 0.1	0.4
E835423	0.25	< 0.1	118	13.4	8.5	6.6	15.3	28	1.3	0.82	< 0.1	< 1	< 0.1	< 0.1	64	1.9	4.7	0.7	4.1	1.2	2.0	0.3	2.5
E835424	0.02	< 0.1	70.0	13.5	0.8	6.0	13.9	46	0.2	0.24	< 0.1	< 1	< 0.1	< 0.1	63	5.0	10.4	1.2	5.7	1.7	1.9	0.3	2.4
E835425	0.06	< 0.1	81.9	13.5	1.6	23.0	17.7	36	0.5	0.24	< 0.1	< 1	< 0.1	< 0.1	128	2.1	5.5	0.8	4.7	1.4	2.2	0.4	2.7
E835151	0.07	< 0.1	91.9	16.6	4.2	2.0	16.5	29	< 0.1	0.12	< 0.1	< 1	0.5	< 0.1	15	1.3	3.2	0.5	3.0	1.1	2.1	0.4	2.8
E835152	0.06	< 0.1	72.8	6.0	59.4	0.4	5.8	14	0.6	0.17	< 0.1	< 1	0.3	< 0.1	32	1.4	3.2	0.4	1.9	0.8	0.9	0.1	1.0
E835153	0.05	< 0.1	138	14.3	25.0	4.1	17.6	58	2.0	0.28	< 0.1	< 1	0.6	< 0.1	108	3.5	8.0	1.0	5.0	1.4	2.5	0.4	3.1
E835154	0.02	< 0.1	71.5	10.8	2.0	4.6	12.5	47	2.6	0.65	< 0.1	< 1	0.6	< 0.1	95	6.4	12.6	1.4	6.1	1.5	1.8	0.3	2.1
E835155	< 0.02	0.8	93.7	7.2	41.4	1.7	15.0	20	1.1	0.36	< 0.1	< 1	5.8	< 0.1	9	4.0	8.4	1.0	4.8	1.4	1.8	0.3	2.1
E835156	0.02	0.3	131	17.9	0.4	0.5	26.5	85	2.3	0.19	< 0.1	< 1	0.2	< 0.1	24	4.0	10.5	1.5	7.4	2.5	3.4	0.6	4.4
E835157	0.02	< 0.1	76.4	10.3	13.7	13.6	9.5	30	1.2	0.29	< 0.1	< 1	0.3	< 0.1	97	4.0	7.2	0.8	3.8	0.8	1.4	0.2	1.5
E835158	0.28	3.5	374	11.1	21.3	1.1	10.0	35	0.9	1.41	0.2	2	0.3	0.2	19	7.6	14.6	1.5	6.7	1.6	1.9	0.3	1.7
E835159	0.11	< 0.1	112	10.4	2.5	1.4	12.7	27	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	53	1.9	5.5	0.7	4.5	1.2	1.9	0.3	2.1
E835160	0.06	< 0.1	49.0	13.0	< 0.1	87.4	6.1	93	2.1	1.66	< 0.1	< 1	< 0.1	< 0.1	893	62.7	114	10.0	37.6	5.8	3.8	0.3	1.5
E835161	0.07	< 0.1	111	6.4	234	0.5	8.2	23	0.4	0.34	< 0.1	< 1	0.2	< 0.1	24	1.6	3.9	0.6	3.3	1.0	1.2	0.2	1.4
E835162	0.04	< 0.1	203	18.7	< 0.1	10.5	25.8	73	0.2	0.11	0.1	< 1	0.1	< 0.1	163	7.8	16.2	2.0	10.4	2.5	3.8	0.6	4.2
E835163	0.03	0.2	78.2	13.0	0.3	3.7	14.8	59	1.9	0.60	< 0.1	< 1	0.2	< 0.1	89	4.1	9.1	1.0	4.8	1.7	2.1	0.3	2.3
E835164	0.06	0.7	132	2.5	54.6	0.4	7.1	6	0.4	1.55	< 0.1	< 1	1.9	0.2	25	2.9	5.8	0.7	3.0	0.8	1.0	0.1	0.9
E835165	< 0.02	< 0.1	224	14.9	< 0.1	2.5	27.7	56	0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	146	7.2	16.1	2.2	10.3	3.2	4.3	0.6	4.5
E835166	< 0.02	< 0.1	151	17.1	4.1	< 0.2	16.9	90	4.8	0.52	< 0.1	< 1	0.2	< 0.1	21	2.2	6.0	0.9	4.9	1.6	2.6	0.5	3.5
E835167	0.02	< 0.1	118	17.0	< 0.1	9.2	27.8	84	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	143	5.8	13.9	1.7	9.4	2.7	4.0	0.6	4.6
E835168	0.03	< 0.1	117	16.5	0.8	1.1	25.6	74	0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	45	4.9	11.8	1.5	8.3	2.5	3.2	0.6	4.4
E835169	0.08	0.2	94.7	7.8	239	0.5	8.7	23	0.6	0.29	< 0.1	< 1	0.5	< 0.1	9	1.4	3.9	0.6	3.2	1.1	1.6	0.2	1.5
E835170	1.38	0.8	32.7	6.2	8650	14.8	7.8	32	1.5	4.35	< 0.1	5	2.6	0.5	45	6.6	13.4	1.5	6.3	1.4	1.2	0.2	1.1
E835171	0.14	< 0.1	90.0	9.0	16.7	0.5	9.9	25	< 0.1	0.11	< 0.1	< 1	0.1	< 0.1	8	1.1	3.5	0.6	3.2	1.5	1.7	0.3	1.8
E835172	0.11	< 0.1	98.9	9.3	89.2	0.4	10.2	30	1.0	0.23	< 0.1	< 1	0.3	< 0.1	12	2.0	4.9	0.7	3.8	1.5	1.8	0.3	1.7
E835173	0.17	< 0.1	66.8	12.4	2.5	3.4	14.6	34	0.9	0.41	< 0.1	< 1	< 0.1	< 0.1	54	4.8	9.8	1.1	5.5	1.5	2.1	0.3	2.5

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835174	0.06	< 0.1	80.7	6.7	0.8	0.4	6.9	21	0.2	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	0.7	2.8	0.4	2.6	0.9	1.3	0.2	1.2
E835175	0.19	0.1	29.9	6.8	0.9	0.7	3.6	56	1.6	2.53	< 0.1	< 1	< 0.1	< 0.1	4	7.0	13.6	1.4	5.5	0.8	0.8	< 0.1	0.5
E835176	0.03	< 0.1	55.7	19.5	< 0.1	43.5	10.5	133	1.0	0.08	< 0.1	< 1	< 0.1	< 0.1	702	12.7	30.0	2.9	11.2	3.1	2.3	0.3	2.2
E835177	0.43	0.4	56.1	12.2	0.4	48.3	7.6	122	5.8	3.68	< 0.1	1	< 0.1	0.2	82	7.2	16.3	1.8	7.2	1.5	1.4	0.2	1.4
E835178	0.06	< 0.1	71.0	5.9	268	1.9	6.2	19	0.1	0.20	< 0.1	< 1	0.5	< 0.1	14	1.2	3.3	0.5	2.6	0.7	1.1	0.2	1.2
E835179	0.08	< 0.1	101	10.6	2.5	0.6	13.3	35	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	38	1.2	4.1	0.6	3.7	1.6	1.9	0.3	2.4
E835180	< 0.02	< 0.1	46.6	13.8	< 0.1	91.8	7.3	141	2.7	2.24	< 0.1	< 1	< 0.1	< 0.1	862	69.4	134	13.0	47.9	6.7	4.6	0.4	1.7
E835181	0.11	< 0.1	118	14.3	< 0.1	2.5	18.7	62	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	180	4.0	10.3	1.4	8.0	2.1	3.3	0.5	3.4
E835182	0.05	0.3	28.4	0.9	29.6	0.6	5.7	4	0.3	0.51	< 0.1	< 1	2.3	< 0.1	8	4.1	8.2	0.8	3.3	0.7	0.8	0.1	0.9
E835183	0.02	< 0.1	124	17.3	< 0.1	1.2	23.4	79	3.1	0.41	< 0.1	< 1	0.3	< 0.1	29	3.9	9.4	1.2	6.8	2.1	3.3	0.5	4.2
E835184	< 0.02	< 0.1	115	16.0	1.0	8.7	28.7	85	0.3	< 0.05	< 0.1	< 1	< 0.1	< 0.1	97	5.3	13.0	1.8	9.1	2.7	4.0	0.6	4.9
E835185	0.04	< 0.1	126	16.0	15.4	16.2	26.3	72	1.2	0.30	< 0.1	< 1	0.3	< 0.1	332	5.2	12.3	1.6	8.1	3.2	3.7	0.6	4.7
E835186	< 0.02	< 0.1	140	16.3	6.3	12.3	27.7	80	1.4	0.18	< 0.1	< 1	0.1	< 0.1	155	4.5	11.6	1.6	8.3	2.9	3.8	0.6	4.9
E835187	0.10	< 0.1	72.5	6.7	188	1.0	7.0	17	0.8	0.46	< 0.1	< 1	0.6	< 0.1	9	1.4	3.3	0.5	2.4	0.6	1.1	0.2	1.2
E835188	0.71	0.6	58.8	10.2	1.2	34.7	8.9	42	2.1	2.21	< 0.1	< 1	< 0.1	< 0.1	95	2.1	4.7	0.5	2.9	1.2	1.3	0.2	1.6
E835189	0.45	0.3	43.9	11.3	0.8	7.5	7.7	14	0.8	1.68	< 0.1	< 1	< 0.1	< 0.1	22	0.7	1.7	0.2	1.4	0.3	0.7	0.1	1.2
E835190	0.53	14.6	158	16.4	1670	75.8	15.3	84	6.0	3.45	< 0.1	2	23.2	0.1	28	14.2	33.5	3.9	18.7	3.6	3.7	0.4	2.9
E835191	0.04	< 0.1	71.2	15.9	12.2	49.8	11.3	137	2.0	0.48	< 0.1	< 1	< 0.1	< 0.1	467	13.6	33.2	2.6	10.7	2.1	2.3	0.3	2.0
E835192	0.36	< 0.1	67.0	10.4	12.1	53.4	6.2	39	1.7	2.43	< 0.1	< 1	< 0.1	< 0.1	65	1.7	3.1	0.3	1.5	0.4	0.6	0.1	1.0
E835193	1.14	1.3	171	12.8	0.1	26.1	14.2	57	2.1	1.50	< 0.1	< 1	< 0.1	0.3	78	3.9	8.6	1.0	5.1	1.6	2.0	0.3	2.2
E835194	0.18	0.4	324	10.3	8.3	12.2	17.9	87	6.9	2.39	< 0.1	1	0.3	0.2	136	23.1	45.2	4.7	19.9	4.5	4.0	0.6	3.7
E835195	0.10	< 0.1	111	5.6	305	0.4	7.0	14	0.5	0.33	< 0.1	< 1	0.8	< 0.1	7	1.7	4.5	0.6	3.3	1.2	1.3	0.2	1.3
E835196	< 0.02	< 0.1	113	15.2	3.7	9.5	22.8	72	1.0	0.20	< 0.1	< 1	< 0.1	< 0.1	194	4.5	11.0	1.4	7.7	2.4	3.1	0.5	3.8
E835197	0.02	< 0.1	100	16.3	< 0.1	0.9	27.1	75	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	31	2.3	5.8	0.8	5.1	1.9	3.5	0.6	4.5
E835198	< 0.02	< 0.1	109	16.0	< 0.1	2.0	23.7	64	< 0.1	0.07	< 0.1	< 1	0.1	< 0.1	50	4.4	11.8	1.4	7.5	2.5	3.3	0.6	4.1
E835199	0.09	< 0.1	100	7.6	383	1.8	8.4	25	0.1	0.15	< 0.1	< 1	0.7	< 0.1	35	1.3	3.9	0.6	3.2	1.0	1.4	0.2	1.5
E835200	< 0.02	< 0.1	48.4	13.9	< 0.1	94.3	6.8	122	2.3	1.51	< 0.1	1	< 0.1	< 0.1	865	64.6	126	11.8	43.7	6.9	4.2	0.4	1.8
GXR-1 Meas	1350	16.9	809	9.3	464	2.3	28.5	22	0.5	17.9	0.8	25	21.3	7.4	690	7.2	14.2		8.3	2.5	3.9	0.7	4.4
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
GXR-1 Meas	1320	15.1	805	7.5	440	2.2	27.3	19	0.6	17.7	0.7	26	26.0	8.2	705	7.1	13.9		8.4	2.7	3.8	0.6	4.2
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	18.0	5.6	71.3	17.2	110	102	13.4	43	9.4	330	0.2	7	4.0	0.9	71	55.2	107		41.9	5.1	4.7	0.5	2.5
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
GXR-4 Meas	17.8	4.9	72.7	16.2	104	115	12.4	38	8.9	318	0.2	7	4.0	0.8	99	54.4	104		39.5	6.1	4.5	0.5	2.4
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			107	19.8	< 0.1	62.6		55	3.5			2	< 0.1		611	22.3	60.3		27.8	5.4	5.1	0.7	5.0
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
SDC-1 Meas			106	22.3	< 0.1	102		62	11.6			3	0.2		626	31.3	82.2		38.1	7.5	6.4	1.0	5.9
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	0.16	< 0.1	126	25.1	237	66.4	11.9	63	0.3	0.30	< 0.1	< 1	0.3	< 0.1	1490	12.0	32.8		12.2	1.8	2.1	0.3	2.2
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
GXR-6 Meas	0.19	0.4	148	24.1	234	62.5	11.5	56	< 0.1	0.22	< 0.1	< 1	0.3	< 0.1	1330	11.1	31.1		12.0	2.6	2.3	0.3	2.2
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			66.8	13.3		2.8	15.9	38	1.4				0.6		110	3.5			4.8				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
DNC-1a Meas			69.9	12.9		3.0	15.6	38	1.2				0.2		107	3.6			4.7				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.68		205	24.8	28.3	114	30.4	122	13.4	2.07		3	0.9		602	49.1	105	11.2	48.0	8.4	7.8	1.0	6.2
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
SBC-1 Meas	0.64		206	24.3	26.5	120	30.2	118	12.2	2.30		3	0.9		548	50.6	104	11.1	48.0	9.8	7.9	1.0	6.3
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.32		44.5	20.0	4.5	34.6	11.2	62	< 0.1	0.28	< 0.1	< 1	< 0.1		196	16.1	34.7	3.4	13.8	2.8	2.4	0.3	2.1
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
OREAS 45d (4-Acid) Meas	0.30		44.3	19.5	4.7	33.5	10.5	46	0.1	0.21	< 0.1	< 1	< 0.1		188	15.8	34.0	3.3	13.8	2.7	2.4	0.3	2.0
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	1.04		826	14.8		117	25.2	66	2.6	12.2					1100	45.4	97.3	9.5	37.4	6.7	5.8	0.7	4.4
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	0.98		829	13.4		99.1	23.8	105	3.0	11.7					1060	45.9	96.5	9.6	38.5	7.8	5.3	0.7	4.6
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 214 Meas																							
OREAS 214 Cert																							
OREAS 216 (Fire Assay) Meas																							
OREAS 216 (Fire Assay) Cert																							
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 220 (Fire Assay) Meas																							
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OREAS 220 (Fire Assay) Cert																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
E837260 Orig																							
E837260 Dup																							
E837271 Orig																							
E837271 Dup																							
E837278 Orig	< 0.02	< 0.1	94.9	9.4	< 0.1	0.6	12.6	25	0.7	0.13	< 0.1	< 1	0.1	< 0.1	36	3.3	7.5	1.1	5.4	1.3	2.2	0.3	2.3
E837278 Dup	< 0.02	< 0.1	95.8	9.4	< 0.1	0.6	12.9	26	0.3	0.08	< 0.1	< 1	0.2	< 0.1	40	3.2	7.6	1.1	5.6	1.5	2.2	0.3	2.2
E837280 Orig																							
E837280 Dup																							
E837283 Orig	< 0.02	< 0.1	125	16.9	1.5	2.6	22.3	81	1.1	0.37	< 0.1	< 1	< 0.1	< 0.1	22	5.1	12.6	1.6	8.4	2.3	3.2	0.5	3.9
E837283 Dup	< 0.02	< 0.1	123	16.3	1.0	2.6	22.2	83	1.6	0.33	< 0.1	< 1	< 0.1	< 0.1	22	4.9	12.3	1.5	8.5	2.1	3.2	0.5	3.8
E835081 Orig																							
E835081 Dup																							
E835086 Orig	0.02	< 0.1	99.4	8.6	39.6	4.4	9.8	28	< 0.1	0.13	< 0.1	< 1	0.4	< 0.1	60	2.0	4.9	0.7	3.8	1.2	1.8	0.3	1.9
E835086 Split	< 0.02	< 0.1	100	8.7	63.5	4.0	10.1	29	0.2	0.13	< 0.1	< 1	0.5	< 0.1	57	1.9	5.3	0.7	4.1	0.9	1.7	0.3	1.8
E835091 Orig																							
E835091 Dup																							
E835100 Orig	< 0.02	< 0.1	37.2	11.7	< 0.1	104	5.9	112	2.3	1.56	< 0.1	< 1	< 0.1	< 0.1	706	53.7	100	9.6	38.9	4.8	3.5	0.3	1.4
E835100 Dup	< 0.02	< 0.1	44.6	14.1	< 0.1	94.8	6.9	178	3.5	1.82	< 0.1	< 1	< 0.1	< 0.1	828	63.1	120	11.0	42.4	5.1	4.0	0.3	1.7
E835401 Orig																							
E835401 Dup																							
E835410 Orig	0.50	14.3	157	16.0	1430	92.1	15.4	78	6.0	3.16	< 0.1	2	23.1	0.1	28	14.4	34.1	4.1	19.1	3.3	3.6	0.4	2.9
E835410 Dup	0.48	14.2	151	15.4	1480	84.0	14.4	76	5.4	3.18	< 0.1	2	21.9	0.1	20	12.5	31.2	3.9	18.5	2.6	3.5	0.4	2.7
E835412 Orig	0.03	< 0.1	21.1	0.4	96.8	0.4	5.1	1	< 0.1	0.96	< 0.1	< 1	1.0	< 0.1	5	1.6	3.0	0.3	1.7	0.2	0.5	< 0.1	0.7
E835412 Dup	0.03	0.2	23.3	0.3	95.9	0.3	5.2	1	< 0.1	1.30	< 0.1	< 1	1.0	< 0.1	4	1.4	2.8	0.3	1.4	0.4	0.5	< 0.1	0.6
E835415 Orig																							
E835415 Dup																							



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835425 Orig																							
E835425 Dup																							
E835160 Orig																							
E835160 Dup																							
E835161 Orig	0.07	< 0.1	111	6.4	234	0.5	8.2	23	0.4	0.34	< 0.1	< 1	0.2	< 0.1	24	1.6	3.9	0.6	3.3	1.0	1.2	0.2	1.4
E835161 Split	0.06	< 0.1	107	6.1	231	0.5	8.1	21	0.4	0.43	< 0.1	< 1	0.4	< 0.1	23	1.5	3.7	0.5	3.3	0.6	1.4	0.2	1.6
E835164 Orig	0.06	0.7	132	2.5	54.6	0.4	7.1	6	0.4	1.55	< 0.1	< 1	1.9	0.2	25	2.9	5.8	0.7	3.0	0.8	1.0	0.1	0.9
E835164 Dup	0.06	0.6	125	2.4	53.1	0.3	6.7	6	0.4	1.68	< 0.1	< 1	1.5	0.2	22	2.8	5.6	0.6	2.7	0.7	0.9	0.1	1.1
E835174 Orig																							
E835174 Dup																							
E835184 Orig																							
E835184 Dup																							
E835189 Orig	0.45	0.3	43.9	11.3	0.8	7.5	7.7	14	0.8	1.68	< 0.1	< 1	< 0.1	< 0.1	22	0.7	1.7	0.2	1.4	0.3	0.7	0.1	1.2
E835189 Dup	0.44	0.3	44.6	11.2	0.2	7.5	7.6	13	0.7	2.13	< 0.1	< 1	< 0.1	< 0.1	21	0.7	1.8	0.3	1.2	0.7	0.9	0.2	1.3
E835199 Orig	0.09	< 0.1	100	7.6	383	1.8	8.4	25	0.1	0.15	< 0.1	< 1	0.7	< 0.1	35	1.3	3.9	0.6	3.2	1.0	1.4	0.2	1.5
E835199 Dup	0.09	0.1	97.2	7.5	385	1.8	8.3	24	0.1	0.19	< 0.1	< 1	0.8	< 0.1	35	1.4	3.9	0.6	3.5	0.9	1.4	0.2	1.6
Method Blank	< 0.02	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	< 0.2	0.1	0.2	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E837251	43.3	< 0.1	0.4	3.3	0.4	< 0.1	154	< 0.1	0.001	0.06	2.5	1.4	0.3	
E837252	162	0.2	0.2	1.1	0.1	< 0.1	90.7	< 0.1	< 0.001	< 0.05	2.4	0.4	0.1	
E837253	65.8	0.3	0.2	1.2	0.1	< 0.1	44.4	< 0.1	< 0.001	< 0.05	1.9	0.5	0.1	
E837254	31.8	0.2	< 0.1	0.5	< 0.1	< 0.1	1.4	0.5	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
E837255	19.8	0.2	0.2	1.6	0.2	< 0.1	51.2	< 0.1	< 0.001	< 0.05	0.9	0.5	0.1	
E837256	947	0.4	0.3	1.9	0.2	0.2	47.8	2.3	< 0.001	< 0.05	17.0	0.9	0.3	
E837257	68.0	< 0.1	0.1	0.8	0.1	< 0.1	34.9	0.7	< 0.001	0.13	1.4	0.3	2.8	
E837258	35.0	0.3	0.2	1.4	0.2	< 0.1	180	< 0.1	< 0.001	0.13	4.7	2.9	0.8	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E837259	50.7	< 0.1	0.1	0.9	0.1	0.5	166	0.5	< 0.001	0.33	6.2	1.3	0.4		
E837260	8.6	< 0.1	< 0.1	0.6	< 0.1	0.3	151	6.2	< 0.001	0.94	35.8	42.0	2.1		
E837261	47.2	< 0.1	0.2	1.4	0.2	< 0.1	116	< 0.1	< 0.001	0.23	5.8	3.6	0.7		
E837262	98.3	0.2	0.2	1.7	0.2	< 0.1	40.2	< 0.1	< 0.001	0.06	2.5	0.7	0.2		
E837263	28.4	0.3	0.2	1.4	0.2	< 0.1	153	< 0.1	< 0.001	0.31	5.9	5.3	1.1		
E837264	14.7	0.2	0.2	1.5	0.2	< 0.1	275	< 0.1	< 0.001	0.06	5.1	4.0	0.8		
E837265	25.7	0.2	0.2	1.2	0.2	< 0.1	97.8	< 0.1	< 0.001	0.14	2.7	0.2	< 0.1		
E837266	37.2	0.2	0.2	1.6	0.2	0.2	32.9	7.1	< 0.001	0.36	4.9	2.7	0.8		
E837267	120	< 0.1	0.1	1.1	0.1	< 0.1	46.0	1.8	< 0.001	< 0.05	2.2	0.4	0.1		
E837268	139	0.2	0.5	3.8	0.5	< 0.1	91.1	< 0.1	0.002	0.06	5.1	1.5	0.4		
E837269	68.4	< 0.1	0.4	3.1	0.4	< 0.1	87.6	< 0.1	< 0.001	0.08	2.3	1.1	0.2		
E837270	70.6	0.2	< 0.1	0.8	0.1	0.1	69.3	94.3	< 0.001	0.13	7.7	1.6	0.4	13.7	
E837271	173	0.5	0.2	1.2	0.2	< 0.1	69.4	2.3	< 0.001	0.07	0.8	0.3	0.1		
E837272	117	0.2	0.2	1.8	0.2	< 0.1	92.5	< 0.1	< 0.001	0.06	2.6	2.7	0.4		
E837273	11.8	< 0.1	< 0.1	0.4	< 0.1	0.4	95.5	0.2	< 0.001	0.18	11.7	6.3	1.4		
E837274	104	< 0.1	< 0.1	0.6	< 0.1	0.2	43.1	1.4	< 0.001	0.76	3.7	1.2	0.4		
E837275	67.1	0.4	0.2	1.4	0.2	< 0.1	44.0	1.3	< 0.001	0.35	3.2	0.7	0.2		
E837276	4.6	0.1	< 0.1	0.3	< 0.1	< 0.1	1.6	1.1	< 0.001	< 0.05	0.7	< 0.1	< 0.1		
E837277	65.9	0.3	0.3	2.0	0.3	< 0.1	78.2	0.1	< 0.001	0.06	10.6	0.9	0.2		
E837278	101	0.2	0.2	1.4	0.2	< 0.1	54.9	< 0.1	< 0.001	< 0.05	1.5	0.7	0.2		
E837279	230	0.2	0.3	2.0	0.2	< 0.1	20.9	< 0.1	< 0.001	< 0.05	11.9	0.8	0.2		
E837280	9.2	< 0.1	< 0.1	0.7	0.1	< 0.1	189	1.8	< 0.001	0.96	38.3	48.9	2.2		
E837281	34.6	< 0.1	0.5	3.3	0.5	< 0.1	133	< 0.1	< 0.001	< 0.05	2.4	1.2	0.2		
E837282	43.1	< 0.1	0.4	3.0	0.4	< 0.1	125	< 0.1	< 0.001	< 0.05	2.2	1.0	0.2		
E837283	138	< 0.1	0.4	2.8	0.4	< 0.1	76.8	0.4	0.001	< 0.05	2.6	1.0	0.3		
E837284	24.7	0.1	< 0.1	0.3	< 0.1	< 0.1	1.2	0.3	< 0.001	< 0.05	0.7	< 0.1	< 0.1		
E837285	81.1	0.3	0.3	1.8	0.2	< 0.1	52.0	< 0.1	< 0.001	0.07	1.2	0.2	< 0.1		
E837286	25.1	0.1	0.2	1.5	0.2	< 0.1	88.1	< 0.1	< 0.001	0.17	4.6	3.7	0.9		
E837287	36.3	0.4	0.1	0.9	0.1	< 0.1	25.8	3.7	< 0.001	< 0.05	< 0.5	0.3	< 0.1		
E837288	99.8	< 0.1	0.4	3.5	0.5	< 0.1	130	< 0.1	< 0.001	0.08	2.5	1.2	0.3		
E837289	41.1	< 0.1	0.4	3.2	0.4	< 0.1	137	< 0.1	0.001	0.06	2.1	1.2	0.3		
E837290	190	< 0.1	0.3	1.9	0.3	0.3	138	1.8	< 0.001	2.20	31.4	3.2	2.3		
E835077	122	0.6	0.2	1.3	0.1	< 0.1	98.0	< 0.1	< 0.001	0.07	1.9	0.2	< 0.1		
E835078	164	0.2	0.2	1.6	0.2	< 0.1	93.5	< 0.1	< 0.001	< 0.05	2.9	0.6	0.2		
E835079	76.6	0.4	0.2	1.6	0.2	< 0.1	73.8	< 0.1	< 0.001	0.13	3.1	0.3	< 0.1		
E835080	7.8	< 0.1	< 0.1	0.5	< 0.1	0.2	169	0.3	< 0.001	0.95	34.1	31.3	2.1		
E835081	44.2	< 0.1	0.2	1.2	0.1	0.4	101	0.5	< 0.001	0.18	7.7	6.5	2.4		
E835082	82.3	0.2	0.2	1.5	0.2	< 0.1	37.3	< 0.1	< 0.001	< 0.05	1.1	0.5	0.2		
E835083	4.7	0.5	< 0.1	0.5	< 0.1	< 0.1	2.3	4.0	< 0.001	< 0.05	1.8	< 0.1	< 0.1		
E835084	13.2	0.6	< 0.1	0.6	< 0.1	< 0.1	13.8	0.7	< 0.001	< 0.05	< 0.5	0.2	< 0.1		
E835085	0.9	0.4	0.1	0.7	< 0.1	< 0.1	14.5	< 0.1	< 0.001	< 0.05	< 0.5	0.3	< 0.1		
E835086	128	0.3	0.1	1.1	0.1	< 0.1	36.1	< 0.1	< 0.001	< 0.05	0.5	0.4	0.1		
E835087	18.4	< 0.1	0.1	0.8	0.1	< 0.1	86.4	1.1	< 0.001	0.35	8.2	5.1	1.2		

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E835088	16.9	0.1	0.2	1.8	0.2	< 0.1	249	< 0.1	< 0.001	0.08	6.9	3.9	0.9		
E835089	141	0.5	0.1	1.1	0.1	< 0.1	24.2	< 0.1	< 0.001	< 0.05	0.8	0.5	0.1		
E835090	205	< 0.1	0.2	1.8	0.2	0.3	137	2.3	< 0.001	2.19	31.3	2.7	2.2		
E835091	20.6	< 0.1	0.1	0.9	0.1	< 0.1	2.9	0.4	< 0.001	< 0.05	1.1	0.4	0.1		
E835092	101	0.5	0.4	3.2	0.4	0.2	54.2	0.2	< 0.001	< 0.05	2.4	1.1	0.3		
E835093	94.8	0.4	0.2	1.3	0.2	< 0.1	92.4	< 0.1	< 0.001	< 0.05	2.7	0.6	0.2		
E835094	33.9	< 0.1	0.1	1.0	0.1	< 0.1	49.1	< 0.1	< 0.001	0.34	5.0	3.2	0.7		
E835095	< 0.2	4.4	0.2	1.3	0.1	< 0.1	2.2	1.0	< 0.001	< 0.05	1.2	< 0.1	< 0.1		
E835096	77.5	0.3	0.2	1.4	0.2	< 0.1	73.8	< 0.1	< 0.001	< 0.05	3.8	0.2	< 0.1		
E835097	86.0	< 0.1	0.4	2.9	0.4	< 0.1	134	< 0.1	< 0.001	< 0.05	2.4	1.0	0.2		
E835098	147	< 0.1	0.3	2.5	0.3	< 0.1	82.8	< 0.1	< 0.001	0.07	5.3	1.1	0.3		
E835099	133	< 0.1	0.3	2.4	0.3	< 0.1	55.9	< 0.1	0.005	0.34	28.3	4.1	1.0		
E835100	6.9	< 0.1	< 0.1	0.5	< 0.1	< 0.1	161	2.6	< 0.001	0.77	28.4	31.4	2.0		
E835401	33.1	0.4	0.1	1.0	0.1	< 0.1	10.5	< 0.1	< 0.001	< 0.05	0.9	0.5	0.1		
E835402	147	0.3	0.3	2.2	0.3	< 0.1	88.1	0.2	< 0.001	0.08	2.9	0.3	0.1		
E835403	41.1	0.4	< 0.1	0.7	< 0.1	< 0.1	11.9	0.1	< 0.001	< 0.05	0.5	0.3	0.3		
E835404	225	< 0.1	0.2	1.1	0.2	0.1	81.2	0.9	< 0.001	< 0.05	4.6	1.8	0.5		
E835405	76.3	0.3	0.1	1.1	0.1	< 0.1	61.3	< 0.1	< 0.001	< 0.05	2.0	0.4	0.4		
E835406	112	< 0.1	0.4	3.1	0.4	< 0.1	207	< 0.1	< 0.001	< 0.05	3.2	1.2	0.3		
E835407	92.1	< 0.1	0.4	3.3	0.5	< 0.1	89.8	< 0.1	< 0.001	0.24	5.7	1.3	0.3		
E835408	110	0.3	0.4	2.9	0.4	< 0.1	105	0.4	< 0.001	0.19	2.0	1.0	0.4		
E835409	30.7	0.7	0.2	1.2	0.2	< 0.1	50.9	0.3	< 0.001	< 0.05	1.9	0.8	0.2		
E835410	193	< 0.1	0.2	1.9	0.3	0.3	140	2.1	< 0.001	2.21	31.3	2.9	2.3		
E835411	0.9	< 0.1	< 0.1	0.3	< 0.1	< 0.1	38.0	0.4	< 0.001	0.27	3.6	4.9	1.2		
E835412	10.5	< 0.1	< 0.1	0.6	< 0.1	< 0.1	3.3	0.5	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
E835413	2.5	< 0.1	< 0.1	0.3	< 0.1	< 0.1	2.2	0.2	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
E835414	1.6	0.2	0.1	0.8	0.1	< 0.1	1.8	1.2	< 0.001	< 0.05	2.2	< 0.1	< 0.1		
E835415	50.3	< 0.1	0.5	3.4	0.5	< 0.1	77.4	< 0.1	< 0.001	< 0.05	5.6	1.2	0.3		
E835416	11.7	< 0.1	< 0.1	0.8	0.1	< 0.1	12.4	1.2	< 0.001	< 0.05	444	0.3	< 0.1		
E835417	199	< 0.1	0.1	0.8	0.1	0.2	21.4	0.6	0.002	0.08	3.4	2.4	0.8		
E835418	86.7	< 0.1	0.2	1.5	0.2	0.2	87.2	2.2	< 0.001	< 0.05	5.9	2.2	0.6		
E835419	15.7	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.3	0.4	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
E835420	24.7	< 0.1	< 0.1	0.7	< 0.1	< 0.1	185	> 200	< 0.001	1.02	34.0	43.6	2.4		
E835421	4.7	< 0.1	< 0.1	0.5	< 0.1	< 0.1	1.0	2.0	< 0.001	< 0.05	< 0.5	0.2	0.2		
E835422	2.5	1.1	< 0.1	0.4	< 0.1	< 0.1	0.5	19.7	< 0.001	< 0.05	2.1	< 0.1	< 0.1		
E835423	107	0.2	0.2	1.8	0.2	< 0.1	82.9	0.8	< 0.001	0.12	1.6	0.2	0.2		
E835424	44.2	0.2	0.2	1.6	0.2	< 0.1	69.7	0.3	< 0.001	0.19	4.2	2.1	0.3		
E835425	63.6	0.3	0.3	2.0	0.3	< 0.1	55.1	0.2	< 0.001	0.16	1.8	0.9	0.2		
E835151	96.2	0.4	0.3	2.0	0.3	< 0.1	91.6	0.2	< 0.001	< 0.05	1.7	0.2	0.1		
E835152	22.7	0.5	< 0.1	0.7	< 0.1	< 0.1	17.0	0.2	< 0.001	< 0.05	1.0	0.3	< 0.1		
E835153	96.4	0.5	0.3	2.0	0.2	0.1	44.9	1.0	< 0.001	0.06	7.3	0.8	0.2		
E835154	63.4	0.5	0.2	1.4	0.2	0.2	68.6	1.8	< 0.001	< 0.05	3.8	2.3	1.1		

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E835155	59.9	< 0.1	0.3	1.8	0.2	< 0.1	13.7	3.2	< 0.001	< 0.05	22.1	0.6	0.3		
E835156	55.3	0.3	0.4	3.3	0.4	0.1	138	0.2	< 0.001	< 0.05	2.3	1.1	0.3		
E835157	49.3	0.6	0.1	1.1	0.2	< 0.1	79.2	0.4	< 0.001	0.06	1.3	0.7	0.2		
E835158	116	0.6	0.2	1.1	0.2	< 0.1	35.5	< 0.1	0.001	0.05	6.7	1.3	0.4		
E835159	44.8	0.2	0.2	1.4	0.2	< 0.1	64.3	< 0.1	< 0.001	< 0.05	2.1	0.5	0.2		
E835160	14.7	< 0.1	< 0.1	0.5	< 0.1	< 0.1	196	5.5	< 0.001	0.90	32.5	34.1	2.7		
E835161	6.1	0.5	0.1	0.9	0.1	< 0.1	14.8	< 0.1	< 0.001	< 0.05	< 0.5	0.3	0.1		
E835162	239	< 0.1	0.4	3.1	0.4	< 0.1	105	< 0.1	< 0.001	0.07	4.7	1.1	0.3		
E835163	52.7	0.5	0.2	1.6	0.2	0.1	75.1	0.3	< 0.001	< 0.05	2.7	2.3	0.6		
E835164	91.6	< 0.1	0.1	0.8	< 0.1	< 0.1	1.7	4.0	< 0.001	< 0.05	1.3	0.3	0.1		
E835165	96.0	< 0.1	0.4	3.3	0.4	< 0.1	66.1	< 0.1	< 0.001	< 0.05	1.8	1.3	0.3		
E835166	76.6	0.6	0.3	2.6	0.3	0.3	90.0	2.2	< 0.001	< 0.05	1.4	0.6	0.3		
E835167	95.9	< 0.1	0.4	3.4	0.5	< 0.1	88.2	< 0.1	0.001	0.10	2.3	1.3	0.3		
E835168	40.5	< 0.1	0.4	3.1	0.4	< 0.1	107	< 0.1	0.001	< 0.05	2.5	1.1	0.2		
E835169	86.6	0.5	0.1	0.9	< 0.1	< 0.1	36.2	< 0.1	< 0.001	< 0.05	0.6	0.3	< 0.1		
E835170	67.8	< 0.1	0.1	0.8	< 0.1	0.1	71.6	92.8	< 0.001	0.13	7.4	1.7	0.5	13.6	
E835171	16.6	0.3	0.1	1.0	0.1	< 0.1	9.4	0.1	< 0.001	< 0.05	0.7	0.4	0.1		
E835172	102	0.6	0.1	1.1	0.1	< 0.1	35.9	0.6	< 0.001	< 0.05	2.0	0.4	0.1		
E835173	78.2	0.4	0.2	1.7	0.2	< 0.1	105	0.3	< 0.001	< 0.05	2.3	1.4	2.1		
E835174	58.9	0.5	< 0.1	0.7	< 0.1	< 0.1	4.6	< 0.1	< 0.001	< 0.05	0.7	0.2	< 0.1		
E835175	52.5	< 0.1	< 0.1	0.4	< 0.1	0.2	1.1	3.0	< 0.001	0.05	0.9	1.8	0.5		
E835176	30.9	< 0.1	0.2	1.6	0.2	< 0.1	147	< 0.1	< 0.001	0.29	10.7	4.2	1.0		
E835177	42.3	< 0.1	0.1	1.1	0.2	0.5	22.9	2.4	< 0.001	0.49	6.0	2.4	1.1		
E835178	1.9	0.2	< 0.1	0.7	< 0.1	< 0.1	170	< 0.1	< 0.001	< 0.05	2.3	0.3	< 0.1		
E835179	31.8	0.3	0.2	1.4	0.2	< 0.1	40.7	< 0.1	< 0.001	< 0.05	1.9	0.5	0.1		
E835180	18.7	< 0.1	< 0.1	0.5	< 0.1	< 0.1	190	7.2	< 0.001	0.92	32.9	42.9	2.3		
E835181	170	< 0.1	0.3	2.1	0.3	< 0.1	46.5	< 0.1	< 0.001	< 0.05	4.7	0.9	0.3		
E835182	12.7	0.3	< 0.1	0.8	0.1	< 0.1	0.6	1.0	< 0.001	< 0.05	1.3	0.2	< 0.1		
E835183	95.1	0.4	0.4	2.8	0.4	0.2	102	0.2	0.001	< 0.05	2.4	1.1	1.8		
E835184	78.1	< 0.1	0.5	3.3	0.5	< 0.1	100	< 0.1	< 0.001	< 0.05	1.9	1.2	0.3		
E835185	107	0.2	0.4	3.2	0.4	< 0.1	122	< 0.1	0.001	0.12	3.0	1.1	0.3		
E835186	71.3	0.3	0.5	3.3	0.4	< 0.1	124	< 0.1	0.001	0.09	2.0	1.2	0.3		
E835187	51.0	0.2	0.1	0.8	< 0.1	< 0.1	40.2	0.3	< 0.001	< 0.05	< 0.5	0.3	< 0.1		
E835188	56.0	< 0.1	0.2	1.2	0.2	0.2	40.9	1.8	< 0.001	0.76	1.7	1.1	0.4		
E835189	164	< 0.1	0.1	1.1	0.2	< 0.1	103	1.2	< 0.001	0.09	1.1	0.2	0.2		
E835190	192	< 0.1	0.2	1.8	0.2	0.3	141	2.2	< 0.001	2.24	32.9	3.2	15.8		
E835191	37.3	0.2	0.2	1.3	0.2	0.2	171	0.1	< 0.001	0.30	11.5	7.4	1.2		
E835192	29.0	< 0.1	< 0.1	0.7	0.1	< 0.1	25.2	6.0	< 0.001	0.40	2.4	0.9	0.3		
E835193	361	0.3	0.2	1.5	0.2	0.1	35.2	0.5	< 0.001	0.33	5.4	1.4	0.5		
E835194	26.9	< 0.1	0.3	2.3	0.3	0.4	30.5	1.5	< 0.001	0.13	56.0	8.3	2.1		
E835195	20.0	0.3	< 0.1	0.7	< 0.1	< 0.1	75.3	0.4	< 0.001	< 0.05	0.7	0.3	< 0.1		
E835196	107	0.1	0.3	2.6	0.3	< 0.1	116	0.2	< 0.001	0.09	2.4	0.9	0.2		
E835197	29.7	< 0.1	0.4	3.2	0.4	< 0.1	144	< 0.1	0.002	< 0.05	1.8	1.1	0.3		

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E835198	83.3	< 0.1	0.4	2.9	0.4	< 0.1	165	< 0.1	< 0.001	< 0.05	1.8	1.1	0.2	
E835199	23.4	0.4	0.1	0.9	0.1	< 0.1	8.6	< 0.1	< 0.001	< 0.05	0.6	0.3	0.1	
E835200	28.2	< 0.1	< 0.1	0.5	< 0.1	< 0.1	181	11.7	< 0.001	0.92	33.7	38.3	2.0	
GXR-1 Meas	1160		0.3	2.2	0.3	< 0.1	285	133		0.43	723	2.5	32.9	
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
GXR-1 Meas	1140		0.3	2.2	0.3	< 0.1	289	146		0.39	718	2.5	32.6	
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas												> 500	2240	
DH-1a Cert												910	2629	
DH-1a Meas												> 500	2270	
DH-1a Cert												910	2629	
GXR-4 Meas	6170		0.2	1.1	0.1	0.6	203	35.1		3.20	46.8	18.5	5.6	
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
GXR-4 Meas	5930		0.1	1.0	0.1	0.6	203	34.7		3.05	46.9	18.5	5.5	
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas	29.7		0.4	2.9		0.1	151	< 0.1		0.59	22.9	8.3	2.3	
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
SDC-1 Meas	29.5		0.5	3.3		0.5	166	< 0.1		0.66	24.8	10.9	2.7	
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas	67.4			1.7	0.2	< 0.1	37.7	0.1		2.15	96.2	5.0	1.4	
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
GXR-6 Meas	74.8			1.7	0.3	< 0.1	37.6	< 0.1		2.35	104	4.8	1.4	
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas	100			2.0			143				5.9			
DNC-1a Cert	100			2.0			144				6.3			
DNC-1a Meas	97.0			2.0			142				5.5			
DNC-1a Cert	100			2.0			144				6.3			
SBC-1 Meas	35.2		0.4	3.4	0.4	0.7	174	1.6		0.85	34.1	15.7	5.6	
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
SBC-1 Meas	33.6		0.5	3.6	0.4	0.7	176	1.6		0.93	34.9	16.0	5.8	
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas	379			1.4	0.2	< 0.1	29.2	< 0.1		0.26	20.2	14.6	2.7	
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
OREAS 45d (4-Acid) Meas	375			1.4	0.2	< 0.1	30.4	< 0.1		0.23	20.2	14.5	2.6	
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas	245		0.4	2.8	0.4	< 0.1	136	0.2			769	14.3	2.4	
SdAR-M2	236.00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
(U.S.G.S.) Cert	00													
SdAR-M2 (U.S.G.S.) Meas	242		0.4	2.8	0.4	< 0.1	138	0.1			763	14.1	2.5	
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 214 Meas														3.06
OREAS 214 Cert														3.03
OREAS 216 (Fire Assay) Meas														6.70
OREAS 216 (Fire Assay) Cert														6.66
OREAS 220 (Fire Assay) Meas														
OREAS 220 (Fire Assay) Cert														
OREAS 220 (Fire Assay) Meas														
OREAS 220 (Fire Assay) Cert														
OREAS 220 (Fire Assay) Meas														
OREAS 220 (Fire Assay) Cert														
OREAS 220 (Fire Assay) Meas														
OREAS 220 (Fire Assay) Cert														
OREAS 222(FIRE ASSAY) Meas														
OREAS 222(FIRE ASSAY) Cert														
OREAS 222(FIRE ASSAY) Meas														
OREAS 222(FIRE ASSAY) Cert														
OREAS 222(FIRE ASSAY) Meas														
OREAS 222(FIRE ASSAY) Cert														
OREAS 222(FIRE ASSAY) Meas														
OREAS 222(FIRE ASSAY) Cert														
E837260 Orig														
E837260 Dup														
E837271 Orig														
E837271 Dup														

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Ti	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
E837278 Orig	101	0.2	0.2	1.4	0.2	< 0.1	54.9	< 0.1	< 0.001	< 0.05	1.5	0.7	0.2	
E837278 Dup	103	0.2	0.2	1.5	0.2	< 0.1	56.5	< 0.1	< 0.001	< 0.05	1.5	0.7	0.2	
E837280 Orig														
E837280 Dup														
E837283 Orig	138	< 0.1	0.4	2.8	0.4	< 0.1	76.8	0.4	0.001	< 0.05	2.6	1.0	0.3	
E837283 Dup	130	0.2	0.3	2.7	0.3	< 0.1	77.0	0.9	0.001	< 0.05	2.6	1.0	0.3	
E835081 Orig														
E835081 Dup														
E835086 Orig	128	0.3	0.1	1.1	0.1	< 0.1	36.1	< 0.1	< 0.001	< 0.05	0.5	0.4	0.1	
E835086 Split	123	0.3	0.1	1.0	0.1	< 0.1	35.4	< 0.1	< 0.001	< 0.05	0.6	0.4	0.1	
E835091 Orig														
E835091 Dup														
E835100 Orig	6.9	< 0.1	< 0.1	0.5	< 0.1	< 0.1	161	2.6	< 0.001	0.77	28.4	31.4	2.0	
E835100 Dup	7.7	< 0.1	< 0.1	0.6	< 0.1	< 0.1	187	2.8	< 0.001	0.96	34.3	37.8	2.4	
E835401 Orig														
E835401 Dup														
E835410 Orig	193	< 0.1	0.2	1.9	0.3	0.3	140	2.1	< 0.001	2.21	31.3	2.9	2.3	
E835410 Dup	186	< 0.1	0.2	1.7	0.2	0.3	122	2.0	< 0.001	2.11	28.6	2.3	2.2	
E835412 Orig	10.5	< 0.1	< 0.1	0.6	< 0.1	< 0.1	3.3	0.5	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
E835412 Dup	12.2	< 0.1	< 0.1	0.6	< 0.1	< 0.1	1.3	0.4	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
E835415 Orig														
E835415 Dup														
E835425 Orig														
E835425 Dup														
E835160 Orig														
E835160 Dup														
E835161 Orig	6.1	0.5	0.1	0.9	0.1	< 0.1	14.8	< 0.1	< 0.001	< 0.05	< 0.5	0.3	0.1	
E835161 Split	8.6	0.5	0.1	0.8	0.1	< 0.1	14.8	< 0.1	< 0.001	< 0.05	< 0.5	0.3	0.1	
E835164 Orig	91.6	< 0.1	0.1	0.8	< 0.1	< 0.1	1.7	4.0	< 0.001	< 0.05	1.3	0.3	0.1	
E835164 Dup	85.2	< 0.1	< 0.1	0.8	< 0.1	< 0.1	1.6	3.8	< 0.001	< 0.05	1.2	0.3	0.1	
E835174 Orig														
E835174 Dup														
E835184 Orig														
E835184 Dup														
E835189 Orig	164	< 0.1	0.1	1.1	0.2	< 0.1	103	1.2	< 0.001	0.09	1.1	0.2	0.2	
E835189 Dup	161	< 0.1	0.1	1.0	0.2	< 0.1	101	1.2	< 0.001	0.09	1.1	0.2	0.2	
E835199 Orig	23.4	0.4	0.1	0.9	0.1	< 0.1	8.6	< 0.1	< 0.001	< 0.05	0.6	0.3	0.1	
E835199 Dup	30.5	0.4	0.1	0.9	0.1	< 0.1	9.6	< 0.1	< 0.001	< 0.05	0.6	0.4	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA- GRA
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/tonne
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														
Method Blank														< 0.03





**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10877  
**Invoice Date:** 10-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

50 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-10877**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Date Submitted: 03-Oct-17  
Invoice No.: A17-10877  
Invoice Date: 10-Nov-17  
Your Reference: Exploration

GOLDCORP Canada Ltd--Musselwhite Mine  
P.O. Box 7500  
Thunder bay Ontario P7B 6S8  
Canada

ATTN: Katie Lucas

## CERTIFICATE OF ANALYSIS

50 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-10877**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

## Results

## Activation Laboratories Ltd.

## Report: A17-10877

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837341	0.006	< 1	28.6	1.85	0.73	7.30	1.30	1.62	0.1	97	93.7	443	5.32	0.3	35.2	1.2	1.4	0.4	90	0.09	1.90	11.6	0.66
E837342	< 0.005	< 1	47.5	2.34	0.97	8.08	1.31	1.81	0.1	87	56.1	505	5.23	1.2	41.6	1.0	1.4	0.3	80	0.10	2.87	14.9	0.53
E837343	< 0.005	< 1	32.7	1.96	0.70	7.36	1.32	1.59	0.1	71	61.5	379	3.92	1.3	27.8	1.0	1.2	0.3	80	0.19	2.38	9.5	0.56
E837344	0.007	< 1	34.1	2.23	0.82	8.16	1.23	1.75	0.1	85	84.1	398	4.69	3.6	36.3	1.1	1.4	0.3	80	< 0.05	2.25	12.2	0.55
E837345	0.010	< 1	38.6	2.46	0.78	8.12	1.44	1.62	0.2	72	52.4	369	4.01	3.3	37.6	0.6	1.5	0.2	40	0.08	2.66	11.5	0.41
E837346	< 0.005	< 1	36.9	1.91	0.81	7.17	1.24	1.67	0.2	56	65.2	439	4.39	0.8	31.7	1.3	1.2	0.3	80	0.10	2.80	11.6	0.57
E837347	< 0.005	< 1	16.9	2.45	0.57	6.81	1.84	1.60	< 0.1	36	30.7	235	1.92	0.2	22.9	0.8	1.2	0.2	50	< 0.05	1.16	6.6	0.53
E837348	< 0.005	< 1	11.9	2.46	0.53	6.29	1.48	1.73	< 0.1	48	41.0	285	2.20	0.2	18.9	0.8	1.3	0.3	40	< 0.05	0.76	5.8	0.56
E837349	< 0.005	20	28.4	2.16	0.71	6.64	1.60	1.67	< 0.1	65	66.1	356	3.09	2.7	33.6	0.9	1.3	0.2	50	< 0.05	1.51	11.3	0.52
E837350	3.24	6	6.3	1.49	1.28	5.42	2.07	2.91	< 0.1	79	65.3	522	3.45	1.3	29.2	1.5	0.9	0.5	40	1.25	18.6	14.8	0.63
E837191	< 0.005	3	22.8	2.28	0.59	6.71	1.66	1.50	< 0.1	49	38.8	254	2.51	0.9	24.9	0.9	1.1	0.3	50	< 0.05	1.33	7.2	0.51
E837192	0.006	< 1	21.6	2.51	1.02	6.84	1.54	2.28	< 0.1	37	66.0	505	4.24	2.2	36.6	1.3	1.2	0.4	50	< 0.05	1.32	11.1	0.75
E837193	0.005	< 1	20.6	2.57	0.85	7.38	1.53	1.99	< 0.1	28	67.8	365	3.49	1.9	27.3	1.1	1.2	0.3	40	< 0.05	1.71	8.0	0.59
E837194	< 0.005	< 1	55.3	2.06	1.02	6.18	1.08	2.64	0.1	48	74.6	597	4.38	2.9	35.3	1.3	1.0	0.4	40	< 0.05	1.93	12.7	0.79
E837195	< 0.005	< 1	21.3	2.07	1.22	6.02	1.81	2.75	< 0.1	41	38.8	358	2.49	3.2	26.8	1.5	1.2	0.5	50	< 0.05	1.51	8.5	0.84
E837196	0.006	< 1	15.6	2.41	0.56	6.85	1.51	1.71	< 0.1	60	53.5	263	2.58	2.9	20.9	0.8	1.3	0.2	50	< 0.05	1.00	6.0	0.51
E837197	< 0.005	< 1	18.5	2.27	0.61	7.32	1.34	1.62	< 0.1	60	55.4	315	2.86	0.7	22.5	1.0	1.2	0.3	50	< 0.05	1.26	6.6	0.50
E837198	< 0.005	< 1	36.0	2.66	0.99	7.96	1.65	1.97	< 0.1	51	51.3	465	3.82	3.5	40.6	1.1	1.2	0.3	40	< 0.05	2.50	13.0	0.64
E837199	< 0.005	3	17.2	2.31	0.54	6.34	1.56	1.63	< 0.1	52	38.0	255	2.34	0.4	18.5	0.8	1.2	0.2	50	< 0.05	1.29	5.8	0.53
E837200	< 0.005	< 1	15.5	2.49	0.24	7.05	2.94	1.23	< 0.1	25	9.3	238	1.74	0.2	3.3	1.5	1.1	0.5	< 10	0.07	1.29	24.6	0.86
E837201	< 0.005	< 1	15.7	2.32	0.52	6.49	1.52	1.60	< 0.1	44	32.4	248	2.12	0.6	18.6	0.7	1.2	0.2	40	< 0.05	1.13	5.8	0.42
E837202	< 0.005	< 1	18.8	2.25	0.61	6.34	1.50	2.03	< 0.1	48	40.9	306	2.32	2.2	24.2	1.0	1.1	0.3	50	< 0.05	1.03	6.5	0.64
E837203	0.025	< 1	26.4	2.96	0.81	7.66	1.98	1.96	< 0.1	34	40.8	408	2.70	2.0	31.1	0.8	1.4	0.2	30	< 0.05	1.65	9.5	0.49
E837204	< 0.005	< 1	19.6	2.14	1.03	5.87	1.49	2.51	0.1	50	111	646	4.10	5.5	33.9	1.9	1.6	0.6	20	< 0.05	1.21	10.3	0.99
E837205	0.009	< 1	29.0	2.85	0.70	7.56	1.87	1.94	< 0.1	45	46.8	286	3.19	2.2	28.9	0.9	1.3	0.3	20	< 0.05	1.67	8.7	0.59
E837206	< 0.005	< 1	32.4	1.79	1.36	6.03	2.04	3.01	< 0.1	41	54.4	627	3.09	2.7	35.2	1.6	1.4	0.5	50	< 0.05	2.59	11.2	0.89
E837207	< 0.005	23	15.3	2.32	0.98	6.00	1.20	2.57	0.1	87	114	554	3.90	4.8	33.3	1.5	1.3	0.5	50	< 0.05	0.87	9.7	0.78
E837208	0.005	15	17.4	2.44	0.91	6.77	1.33	2.52	< 0.1	78	84.2	428	3.47	3.7	31.3	1.4	1.3	0.4	40	< 0.05	0.92	8.8	0.75
E837209	0.009	< 1	19.6	2.09	0.91	6.73	1.11	2.40	< 0.1	75	122	559	4.86	1.3	32.8	1.5	1.3	0.4	40	< 0.05	1.12	11.6	0.78
E837210	3.19	< 1	6.1	1.49	1.26	5.06	1.89	2.97	< 0.1	47	52.8	505	3.36	0.3	29.1	1.5	1.0	0.5	40	1.25	19.0	14.7	0.61
E837211	0.011	< 1	26.0	> 3.00	0.63	7.85	1.82	1.83	< 0.1	35	25.0	226	2.46	2.0	23.4	0.7	1.4	0.2	50	< 0.05	1.74	6.5	0.47
E837212	0.008	< 1	25.2	2.30	0.54	7.84	1.62	1.74	< 0.1	54	42.3	329	3.12	2.9	28.9	1.2	1.6	0.4	20	< 0.05	1.27	9.4	0.78
E837213	0.006	< 1	16.4	2.17	0.83	5.42	1.22	2.62	< 0.1	47	80.6	463	3.36	3.3	27.3	1.3	1.1	0.4	20	< 0.05	0.76	8.0	0.73
E837214	0.007	< 1	17.7	2.20	0.86	5.95	1.35	2.38	< 0.1	71	100	544	4.34	6.7	32.3	1.6	1.1	0.5	10	< 0.05	0.96	9.4	0.89
E837215	< 0.005	< 1	20.5	2.41	0.72	6.06	1.54	2.16	< 0.1	65	91.3	447	3.43	7.2	29.0	1.4	1.1	0.4	< 10	< 0.05	0.92	7.2	0.78
E837216	< 0.005	< 1	29.5	2.18	0.74	6.29	1.30	2.11	< 0.1	59	79.6	447	3.97	6.5	30.0	1.3	1.3	0.4	20	< 0.05	1.23	10.2	0.73
E837217	< 0.005	17	14.2	2.48	0.73	5.92	1.40	2.14	< 0.1	56	82.8	387	2.84	3.9	27.3	1.3	1.3	0.4	50	< 0.05	0.76	9.3	0.77
E837218	< 0.005	9	13.8	2.38	0.57	6.18	1.53	1.87	0.1	52	65.1	338	2.51	4.9	22.9	1.1	1.2	0.3	50	< 0.05	0.88	7.4	0.57
E837219	0.008	< 1	53.6	2.13	0.98	7.72	1.24	1.70	0.1	59	51.7	431	5.09	3.5	49.7	1.1	1.5	0.3	80	< 0.05	2.94	18.1	0.60
E837220	< 0.005	< 1	17.0	2.53	0.26	7.12	3.36	1.17	< 0.1	26	7.4	234	1.79	0.2	3.8	1.4	1.1	0.5	< 10	0.96	1.35	36.6	0.86
E837221	0.006	< 1	24.1	2.66	0.77	7.41	1.46	2.00	< 0.1	54	40.4	367	2.99	2.4	33.3	1.0	1.4	0.3	50	< 0.05	1.40	10.1	0.54
E837222	< 0.005	< 1	22.4	2.36	0.70	6.27	1.48	1.81	< 0.1	62	63.4	352	3.30	4.5	34.7	1.1	1.2	0.3	20	< 0.05	1.21	10.1	0.59
E837223	< 0.005	2	17.6	2.57	0.69	7.00	1.42	1.92	< 0.1	56	63.4	320	2.70	3.0	26.7	1.0	1.4	0.3	30	< 0.05	1.04	8.1	0.54

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837224	< 0.005	< 1	24.1	2.92	0.81	7.71	1.63	2.02	< 0.1	54	48.3	443	2.86	3.1	36.0	0.9	1.5	0.3	< 10	< 0.05	1.56	11.4	0.64
E837225	< 0.005	< 1	33.2	2.81	0.86	7.47	1.49	1.95	0.1	53	46.3	368	2.85	2.7	35.4	0.9	1.3	0.3	10	0.20	1.85	12.6	0.54
E837226	< 0.005	< 1	14.2	2.37	0.52	6.31	1.48	1.61	< 0.1	46	55.5	272	2.09	3.0	21.1	0.9	1.1	0.2	< 10	< 0.05	0.90	6.5	0.48
E837227	0.005	< 1	18.2	2.20	0.63	6.66	1.47	1.74	0.1	59	63.4	322	2.83	3.9	26.1	0.9	1.3	0.3	20	< 0.05	1.18	8.1	0.55
E837228	< 0.005	15	12.0	2.31	0.50	4.42	1.34	1.73	< 0.1	47	67.6	348	2.22	4.2	24.4	0.8	1.2	0.2	50	< 0.05	0.74	7.7	0.41
E837229	< 0.005	15	17.4	2.11	0.64	5.75	1.81	1.84	< 0.1	49	44.8	536	2.30	4.3	21.8	1.4	1.1	0.4	50	< 0.05	1.64	7.9	0.84
E837230	3.22	< 1	6.5	1.49	1.33	5.46	2.04	2.98	< 0.1	43	55.0	511	3.49	0.4	29.6	1.5	1.2	0.5	50	1.31	19.2	15.2	0.64
GXR-1 Meas		< 1	7.0	0.04	0.19	1.73	0.04	0.80	2.6	77	9.9	851	23.7	0.5	40.0		0.8		820	33.5	2.99	7.6	0.59
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		< 1	10.7	0.51	1.71	6.40	4.12	0.96	0.2	86	42.8	155	3.07	1.4	41.7		2.0		< 10	3.72	2.65	13.9	1.28
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		< 1	32.0	1.44	0.96	7.81	2.59	0.94		35	34.8	806	4.57	0.9	34.8	3.5	2.6	1.1	50		3.76	17.0	1.35
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		< 1	33.9	0.09	0.61	> 10.0	2.01	0.16	< 0.1	156	57.7	1060	5.93	2.4	25.8		1.1		10	0.25	4.31	14.0	0.65
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.0							143	126				271							55.4	0.53
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas			155						0.3	215	87.9			3.5	90.6	3.6	2.9	1.2			8.32	22.3	1.78
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			19.8	0.09	0.23	7.30	0.40	0.18		115	448	472	14.1	2.3	237	1.3	0.7	0.4			3.71	29.6	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			19.1						5.3	24	33.2			1.7	55.0	3.0	7.2	0.9	1180		1.73	13.4	1.25
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			19.1						4.9	23	35.6			3.8	52.3	3.1	7.3	0.9	200		1.76	13.6	1.20
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 220 (Fire Assay) Meas	0.892																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.886																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 222(FIRE ASSAY) Meas	1.27																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.24																						

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert	1.22																						
E837191 Orig	< 0.005																						
E837191 Dup	< 0.005																						
E837198 Orig		< 1	36.0	2.66	0.99	7.96	1.65	1.97	< 0.1	51	51.3	465	3.82	3.5	40.6	1.1	1.2	0.3	40	< 0.05	2.50	13.0	0.64
E837198 Dup		< 1	37.4	2.73	1.03	8.13	1.61	2.06	< 0.1	48	42.8	471	3.88	3.6	39.9	1.2	1.4	0.3	60	< 0.05	2.62	13.0	0.68
E837200 Orig	< 0.005	< 1	15.5	2.49	0.24	7.05	2.94	1.23	< 0.1	25	9.3	238	1.74	0.2	3.3	1.5	1.1	0.5	< 10	0.07	1.29	24.6	0.86
E837200 Dup	< 0.005	< 1	15.3	2.51	0.24	7.15	3.31	1.28	< 0.1	25	8.2	240	1.76	0.1	4.1	1.6	1.1	0.6	< 10	0.14	1.28	27.2	0.93
E837211 Orig	0.011																						
E837211 Dup	0.009																						
E837225 Orig	< 0.005																						
E837225 Dup	< 0.005																						
Method Blank			< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	8.0	26	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	0.12	< 0.01	0.01	< 0.1	< 1	5.1	16	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	8.3	15	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	16.4	30	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837341	0.17	< 0.1	64.6	16.3	0.2	46.7	11.4	43	1.3	0.48	< 0.1	< 1	< 0.1	< 0.1	455	29.1	58.0	5.8	21.6	2.8	2.7	0.4	2.0
E837342	0.27	0.3	96.9	20.8	2.7	57.7	8.6	69	3.6	0.81	< 0.1	1	< 0.1	< 0.1	428	12.6	26.7	2.6	10.2	1.5	1.8	0.3	1.5
E837343	0.16	< 0.1	72.6	16.1	0.8	53.1	9.5	67	5.3	0.60	< 0.1	1	0.1	< 0.1	449	12.7	26.7	2.9	10.9	2.0	1.8	0.3	1.7
E837344	0.20	0.2	73.9	19.1	2.1	43.6	9.8	201	4.8	0.63	< 0.1	1	0.1	< 0.1	418	17.0	37.8	4.1	15.8	3.1	2.5	0.4	1.9
E837345	0.18	0.1	109	20.7	3.7	54.2	6.0	128	5.2	1.01	< 0.1	1	0.1	< 0.1	473	11.7	23.5	2.3	8.7	1.6	1.3	0.2	1.1
E837346	0.23	< 0.1	115	17.6	0.2	50.5	10.4	47	0.5	0.14	< 0.1	< 1	< 0.1	< 0.1	441	13.8	28.7	3.1	12.4	2.2	2.1	0.4	1.8
E837347	0.09	< 0.1	27.0	11.8	0.2	57.8	7.3	20	0.3	0.09	< 0.1	< 1	< 0.1	< 0.1	590	10.5	22.6	2.5	9.6	1.6	1.6	0.2	1.3
E837348	0.09	< 0.1	26.3	12.6	0.8	45.7	8.7	6	1.6	0.20	< 0.1	< 1	< 0.1	< 0.1	509	12.0	27.0	2.8	11.2	2.2	1.7	0.3	1.5
E837349	0.14	< 0.1	41.6	14.8	0.9	55.5	7.8	106	5.9	0.39	< 0.1	1	0.1	< 0.1	514	9.9	23.1	2.5	9.7	1.9	1.6	0.3	1.5
E837350	0.93	< 0.1	51.5	17.4	4.7	529	13.1	51	< 0.1	1.48	< 0.1	< 1	< 0.1	< 0.1	57	3.7	9.8	1.3	6.2	2.0	2.4	0.5	2.6
E837191	0.11	< 0.1	32.6	12.3	0.3	53.2	7.4	72	1.0	0.38	< 0.1	< 1	< 0.1	< 0.1	541	11.1	23.3	2.5	9.8	1.8	1.5	0.3	1.4
E837192	0.15	< 0.1	43.9	16.3	0.9	59.5	11.8	93	0.2	0.09	< 0.1	< 1	< 0.1	< 0.1	476	18.0	41.9	4.4	17.1	3.3	2.7	0.4	2.2
E837193	0.17	< 0.1	52.3	19.9	0.1	65.7	9.3	76	0.2	0.06	< 0.1	< 1	< 0.1	< 0.1	485	10.0	22.9	2.6	10.6	2.0	1.8	0.3	1.7
E837194	0.16	< 0.1	60.1	14.5	45.5	49.5	12.3	138	0.3	0.07	< 0.1	< 1	< 0.1	< 0.1	388	19.8	42.9	4.7	17.9	3.2	2.7	0.4	2.2
E837195	0.11	< 0.1	40.3	11.5	< 0.1	60.5	13.1	132	0.7	0.07	< 0.1	< 1	< 0.1	< 0.1	559	27.8	57.2	6.3	24.0	3.7	3.2	0.5	2.6
E837196	0.12	< 0.1	30.1	15.4	0.4	45.1	6.9	121	3.9	0.39	< 0.1	< 1	< 0.1	< 0.1	499	13.2	26.1	2.7	9.8	1.6	1.4	0.2	1.2
E837197	0.13	0.1	41.7	15.4	0.7	40.8	8.2	57	3.7	0.44	< 0.1	< 1	0.1	< 0.1	463	12.4	26.6	2.8	10.8	1.9	1.8	0.3	1.5
E837198	0.17	< 0.1	62.6	18.8	0.9	66.4	10.5	143	3.6	0.27	< 0.1	< 1	< 0.1	< 0.1	569	23.2	45.6	4.4	16.1	2.8	2.4	0.4	2.0
E837199	0.09	< 0.1	36.8	13.7	0.7	52.1	7.8	28	2.4	0.39	< 0.1	< 1	< 0.1	< 0.1	532	15.8	31.8	3.4	12.3	2.1	1.7	0.3	1.5
E837200	0.05	< 0.1	47.7	12.2	< 0.1	103	15.6	18	1.9	5.17	< 0.1	< 1	< 0.1	< 0.1	1020	96.3	202	20.7	75.3	11.4	7.3	0.9	3.6

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837201	0.10	< 0.1	25.0	14.4	0.1	56.1	5.9	37	1.1	0.22	< 0.1	< 1	< 0.1	< 0.1	528	8.0	17.2	1.8	7.0	1.3	1.2	0.2	1.1
E837202	0.13	< 0.1	28.0	13.2	1.0	52.8	10.0	90	3.8	0.21	< 0.1	< 1	< 0.1	< 0.1	482	19.8	42.1	4.4	16.7	2.5	2.2	0.4	1.8
E837203	0.11	< 0.1	34.6	17.5	0.4	80.0	6.6	81	0.6	0.22	< 0.1	< 1	< 0.1	< 0.1	653	9.3	22.9	2.0	7.6	1.4	1.3	0.2	1.2
E837204	0.14	< 0.1	43.1	14.9	0.1	62.9	17.5	224	0.7	0.12	< 0.1	< 1	< 0.1	< 0.1	463	39.9	74.7	8.5	31.1	5.4	4.2	0.6	3.1
E837205	0.16	< 0.1	37.1	19.0	0.9	64.4	7.8	86	1.0	0.34	< 0.1	< 1	< 0.1	< 0.1	638	10.8	24.4	2.5	10.2	1.7	1.7	0.3	1.4
E837206	0.16	< 0.1	51.5	14.1	0.6	78.4	14.3	105	0.3	0.10	< 0.1	< 1	< 0.1	< 0.1	577	33.3	67.9	7.1	26.9	4.0	3.5	0.5	2.7
E837207	0.15	< 0.1	44.9	16.6	0.7	35.1	13.1	175	9.2	0.46	< 0.1	1	0.2	< 0.1	389	10.1	25.5	3.2	13.4	2.9	2.7	0.5	2.4
E837208	0.13	< 0.1	41.0	16.3	0.3	42.4	12.1	141	6.0	0.42	< 0.1	1	< 0.1	< 0.1	417	18.0	38.8	4.2	16.5	3.1	2.7	0.4	2.2
E837209	0.15	< 0.1	47.1	15.7	< 0.1	38.3	13.3	83	0.2	0.12	< 0.1	< 1	< 0.1	< 0.1	364	19.2	42.1	4.7	18.3	3.0	2.8	0.5	2.4
E837210	0.69	< 0.1	51.4	16.8	5.0	492	13.3	18	< 0.1	0.25	< 0.1	< 1	< 0.1	< 0.1	57	3.7	9.6	1.3	6.0	1.8	2.3	0.4	2.5
E837211	0.12	< 0.1	39.9	17.4	0.7	61.3	5.8	78	0.5	0.15	< 0.1	< 1	< 0.1	< 0.1	616	9.8	21.2	2.1	8.1	1.3	1.2	0.2	1.1
E837212	0.14	< 0.1	32.3	14.4	1.5	55.4	10.4	111	4.8	0.53	< 0.1	< 1	0.1	< 0.1	529	17.1	54.3	4.4	17.2	3.5	2.8	0.4	2.1
E837213	0.14	< 0.1	35.1	14.6	< 0.1	36.8	11.4	128	0.4	0.11	< 0.1	< 1	< 0.1	< 0.1	419	16.8	35.8	4.1	15.6	2.8	2.4	0.4	2.1
E837214	0.14	< 0.1	39.7	14.8	< 0.1	44.9	13.5	278	1.9	0.14	< 0.1	< 1	< 0.1	< 0.1	458	31.5	63.9	6.7	24.5	4.4	3.3	0.5	2.4
E837215	0.11	< 0.1	32.0	13.7	< 0.1	48.2	13.6	306	2.6	0.17	< 0.1	< 1	< 0.1	< 0.1	507	33.0	63.0	7.3	27.5	3.9	3.6	0.5	2.6
E837216	0.14	< 0.1	42.0	15.7	< 0.1	43.4	11.7	262	0.4	0.15	< 0.1	< 1	< 0.1	< 0.1	462	20.6	47.6	4.6	18.4	2.7	2.5	0.4	2.1
E837217	0.10	< 0.1	32.9	13.9	0.2	41.1	11.6	153	4.7	0.24	< 0.1	< 1	< 0.1	< 0.1	468	21.9	46.0	4.8	18.3	2.9	2.6	0.4	2.3
E837218	0.11	< 0.1	48.5	12.8	< 0.1	46.4	8.8	215	3.7	0.31	< 0.1	< 1	< 0.1	< 0.1	511	15.0	30.9	3.3	12.8	2.2	2.0	0.3	1.6
E837219	0.22	< 0.1	75.4	18.4	1.4	57.4	10.2	143	4.1	0.38	< 0.1	< 1	< 0.1	< 0.1	444	15.0	33.2	3.1	12.0	2.0	2.2	0.3	1.8
E837220	0.04	< 0.1	55.1	12.3	< 0.1	108	14.8	17	2.9	0.83	< 0.1	< 1	< 0.1	< 0.1	1020	97.9	201	20.7	75.4	10.5	7.4	0.8	3.6
E837221	0.12	0.3	53.6	16.0	0.9	48.3	8.7	110	3.1	0.37	< 0.1	< 1	< 0.1	< 0.1	513	16.7	31.9	3.2	12.1	2.0	1.8	0.3	1.6
E837222	0.15	< 0.1	35.4	15.7	0.5	49.4	9.2	177	2.2	0.29	< 0.1	< 1	< 0.1	< 0.1	503	15.2	31.6	3.5	13.6	2.0	2.0	0.3	1.7
E837223	0.11	< 0.1	31.9	13.2	0.9	44.4	8.7	127	3.9	0.56	< 0.1	1	< 0.1	< 0.1	479	10.3	21.7	2.6	10.2	1.8	1.8	0.3	1.6
E837224	0.13	< 0.1	45.4	15.9	0.2	57.2	8.8	125	6.1	0.44	< 0.1	< 1	< 0.1	< 0.1	562	25.9	52.4	4.5	16.4	2.3	2.0	0.3	1.6
E837225	0.11	0.1	59.2	16.4	2.1	56.9	7.8	108	7.1	0.45	< 0.1	1	0.1	< 0.1	517	13.1	32.0	2.7	10.6	1.8	1.7	0.3	1.5
E837226	0.08	< 0.1	27.0	13.7	0.9	42.0	7.0	111	5.1	0.30	< 0.1	< 1	0.2	< 0.1	493	8.0	17.0	2.0	8.0	1.4	1.4	0.2	1.4
E837227	0.11	< 0.1	38.0	14.3	0.9	47.2	8.5	160	4.9	0.33	< 0.1	1	0.1	< 0.1	484	13.5	28.3	3.1	11.9	2.0	1.8	0.3	1.5
E837228	0.09	< 0.1	30.8	12.9	< 0.1	26.2	6.3	168	5.8	0.22	< 0.1	< 1	0.1	< 0.1	456	8.4	18.4	2.1	8.5	1.2	1.4	0.2	1.2
E837229	0.13	< 0.1	33.6	12.7	< 0.1	66.5	13.6	186	1.2	0.21	< 0.1	< 1	< 0.1	< 0.1	582	29.5	58.5	6.5	24.6	3.2	3.3	0.5	2.5
E837230	0.73	< 0.1	50.8	16.9	5.4	51.4	13.4	21	< 0.1	0.21	< 0.1	< 1	< 0.1	< 0.1	60	3.7	9.5	1.3	6.2	1.7	2.3	0.5	2.6
GXR-1 Meas	1420	14.0	756	7.5	440	2.4	27.0	20	0.7	17.5	0.8	25	39.4	11.6	716	7.5	15.9		8.4	3.0	4.0	0.9	4.8
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	17.4	5.5	65.6	10.8	107	134	13.8	51	9.5	311	0.2	7	5.0	1.0	1330	57.9	111		41.3	5.6	4.5	0.6	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			98.7	19.3	< 0.1	104		33	0.3			< 1	< 0.1		628	37.1	86.1		37.9	6.7	6.3	1.1	5.9
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.19	0.3	133	23.9	312	77.4	12.7	92	0.8	1.04	< 0.1	< 1	0.5	< 0.1	1310	12.5	37.5		12.7	2.2	2.3	0.4	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			62.2	14.2		3.2	15.9	39	1.4				0.6		107	3.4			4.9				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.68		196	25.1	25.8	131	31.8	131	14.5	2.26		3	1.1		840	49.1	111	12.5	48.8	10.0	7.8	1.3	6.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.32		41.3	22.4	6.6	35.8	10.3	91	0.4	0.60	< 0.1	< 1	< 0.1		188	16.0	37.3	3.6	14.1	2.6	2.3	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	0.98		835	16.5		114	25.8	77	5.6	11.3					1040	44.9	101	10.3	38.1	6.5	5.7	1.0	5.1
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	0.99		771	12.9		111	25.3	124	9.6	11.5					1020	43.4	99.7	10.0	36.7	6.8	5.4	0.9	4.8
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
E837191 Orig																							
E837191 Dup																							
E837198 Orig	0.17	< 0.1	62.6	18.8	0.9	66.4	10.5	143	3.6	0.27	< 0.1	< 1	< 0.1	< 0.1	569	23.2	45.6	4.4	16.1	2.8	2.4	0.4	2.0
E837198 Dup	0.17	< 0.1	62.0	18.2	0.8	67.2	11.0	143	3.6	0.30	< 0.1	3	< 0.1	< 0.1	573	23.8	44.7	4.3	15.8	2.4	2.4	0.4	1.9
E837200 Orig	0.05	< 0.1	47.7	12.2	< 0.1	103	15.6	18	1.9	5.17	< 0.1	< 1	< 0.1	< 0.1	1020	96.3	202	20.7	75.3	11.4	7.3	0.9	3.6
E837200 Dup	0.04	< 0.1	49.6	13.1	< 0.1	110	17.0	20	2.6	0.73	< 0.1	< 1	< 0.1	< 0.1	993	107	224	22.9	84.0	11.9	8.3	0.9	4.0
E837211 Orig																							
E837211 Dup																							
E837225 Orig																							
E837225 Dup																							
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	0.3	0.2	< 0.1	0.3	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	3	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837341	15.4	< 0.1	0.2	1.2	0.2	< 0.1	230	0.1	< 0.001	0.30	17.7	21.3	1.6
E837342	32.2	< 0.1	0.1	0.9	0.1	0.2	220	0.2	< 0.001	0.37	16.7	9.2	1.3
E837343	12.5	0.3	0.2	1.0	0.2	0.4	220	0.3	< 0.001	0.31	14.8	5.9	1.2
E837344	19.2	< 0.1	0.2	1.0	0.2	0.3	215	0.3	< 0.001	0.31	17.3	18.0	1.4
E837345	17.0	< 0.1	< 0.1	0.6	0.1	0.2	228	0.3	< 0.001	0.37	17.5	8.0	1.1
E837346	13.0	0.2	0.2	1.1	0.2	< 0.1	221	< 0.1	< 0.001	0.33	15.1	7.3	1.4
E837347	4.6	< 0.1	0.1	0.7	0.1	< 0.1	280	< 0.1	< 0.001	0.30	13.0	3.7	0.8
E837348	3.5	< 0.1	0.1	0.9	0.1	< 0.1	277	0.2	< 0.001	0.23	13.4	5.8	1.0
E837349	7.1	< 0.1	0.1	0.8	0.1	0.3	242	0.4	< 0.001	0.31	14.5	4.1	0.8
E837350	34.3	< 0.1	0.2	1.3	0.2	< 0.1	89.6	< 0.1	< 0.001	5.36	8.5	0.7	0.2
E837191	9.8	< 0.1	0.1	0.8	0.1	< 0.1	249	< 0.1	< 0.001	0.28	13.5	4.3	0.9
E837192	6.3	< 0.1	0.2	1.3	0.2	< 0.1	283	< 0.1	< 0.001	0.28	15.1	8.9	1.2
E837193	5.5	< 0.1	0.2	1.0	0.2	< 0.1	277	< 0.1	< 0.001	0.29	15.5	5.0	1.0
E837194	39.2	< 0.1	0.2	1.4	0.2	< 0.1	264	< 0.1	< 0.001	0.28	14.7	11.9	2.1
E837195	14.4	< 0.1	0.2	1.2	0.2	< 0.1	252	< 0.1	< 0.001	0.38	12.6	9.8	1.1
E837196	7.7	0.1	0.1	0.7	0.1	0.2	268	0.2	< 0.001	0.24	13.6	4.9	0.8
E837197	18.7	< 0.1	0.1	0.9	0.1	0.1	242	0.3	< 0.001	0.26	14.6	8.7	1.1
E837198	26.3	0.1	0.2	1.1	0.2	0.3	269	0.2	< 0.001	0.43	15.5	9.5	4.4
E837199	3.4	< 0.1	0.1	0.8	0.1	< 0.1	265	0.2	< 0.001	0.26	13.4	7.2	0.9
E837200	80.0	< 0.1	0.2	1.2	0.2	0.2	230	27.3	< 0.001	0.87	38.7	74.9	4.5
E837201	3.7	0.1	< 0.1	0.6	< 0.1	< 0.1	272	0.1	< 0.001	0.27	12.3	4.1	0.7
E837202	6.0	< 0.1	0.2	0.9	0.1	0.3	261	0.1	< 0.001	0.27	13.0	9.1	1.8
E837203	6.8	0.1	0.1	0.7	0.1	< 0.1	305	< 0.1	< 0.001	0.38	14.7	6.0	1.1
E837204	13.7	< 0.1	0.3	1.7	0.3	< 0.1	266	< 0.1	0.003	0.40	12.4	26.0	1.9
E837205	6.9	0.3	0.1	0.8	0.1	< 0.1	302	< 0.1	< 0.001	0.37	16.6	7.7	1.4
E837206	18.4	< 0.1	0.2	1.4	0.2	< 0.1	218	< 0.1	< 0.001	0.47	14.1	13.0	1.4
E837207	5.3	< 0.1	0.2	1.4	0.2	0.7	264	0.4	< 0.001	0.20	13.7	5.1	1.4
E837208	4.2	< 0.1	0.2	1.3	0.2	0.3	276	0.4	< 0.001	0.22	14.1	7.6	1.7
E837209	5.4	< 0.1	0.2	1.4	0.2	< 0.1	244	< 0.1	< 0.001	0.19	12.5	7.2	1.3
E837210	34.7	< 0.1	0.2	1.2	0.2	< 0.1	88.4	< 0.1	< 0.001	5.40	8.0	0.7	0.2
E837211	6.6	0.2	< 0.1	0.6	< 0.1	< 0.1	326	< 0.1	< 0.001	0.39	15.9	5.8	1.0
E837212	8.2	< 0.1	0.2	1.3	0.2	0.2	244	0.2	< 0.001	0.31	15.5	10.7	1.5
E837213	3.6	< 0.1	0.2	1.2	0.2	< 0.1	265	< 0.1	< 0.001	0.21	11.9	8.3	1.2
E837214	3.7	< 0.1	0.3	1.5	0.2	< 0.1	278	< 0.1	< 0.001	0.25	13.0	11.0	1.6
E837215	10.2	< 0.1	0.2	1.3	0.2	< 0.1	282	< 0.1	< 0.001	0.27	12.8	16.2	1.5
E837216	6.2	< 0.1	0.2	1.2	0.2	< 0.1	266	< 0.1	< 0.001	0.25	13.3	8.7	1.6
E837217	5.9	< 0.1	0.2	1.2	0.2	0.2	274	0.2	< 0.001	0.23	13.2	8.2	1.1
E837218	5.4	< 0.1	0.1	0.9	0.1	< 0.1	269	0.2	< 0.001	0.25	12.3	5.2	0.9
E837219	18.4	0.2	0.2	1.0	0.2	0.3	220	0.3	< 0.001	0.38	17.4	7.9	1.3
E837220	107	< 0.1	0.2	1.1	0.2	0.5	221	59.2	< 0.001	0.87	39.7	74.7	4.6
E837221	26.2	< 0.1	0.1	0.9	0.1	0.2	280	0.3	< 0.001	0.30	14.5	6.8	1.0
E837222	7.6	0.2	0.2	1.0	0.2	< 0.1	260	< 0.1	< 0.001	0.28	14.3	6.6	1.0
E837223	7.4	0.2	0.1	0.9	0.1	0.2	270	0.2	< 0.001	0.24	12.8	4.6	0.8



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837224	13.0	< 0.1	0.1	0.8	0.1	0.4	297	0.5	< 0.001	0.36	15.1	9.3	4.8
E837225	13.1	0.3	0.1	0.8	0.1	0.5	269	0.4	< 0.001	0.38	16.0	7.6	1.0
E837226	4.4	< 0.1	0.1	0.8	0.1	0.3	254	0.4	< 0.001	0.24	11.8	4.3	0.7
E837227	7.0	< 0.1	0.1	0.9	0.1	0.2	258	0.4	< 0.001	0.26	13.4	6.3	1.6
E837228	5.5	< 0.1	0.1	0.8	0.1	0.4	228	0.4	< 0.001	0.23	11.6	3.6	0.7
E837229	10.8	< 0.1	0.2	1.3	0.2	< 0.1	254	< 0.1	< 0.001	0.38	13.3	9.5	1.2
E837230	36.6	< 0.1	0.2	1.3	0.2	< 0.1	91.9	< 0.1	< 0.001	5.38	7.9	0.7	0.2
GXR-1 Meas	1150		0.4	2.3	0.3	< 0.1	265	165		0.41	752	2.9	36.4
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2470
DH-1a Cert												910	2629
GXR-4 Meas	6400		0.2	1.1	0.1	0.6	215	38.2		3.15	47.7	23.7	5.9
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	29.9		0.6	3.1		< 0.1	162	< 0.1		0.59	22.4	12.3	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	73.7			1.7	0.3	< 0.1	36.3	0.1		2.22	101	5.8	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	95.1			1.9			135				5.4		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	33.2		0.6	3.4	0.5	1.1	172	1.7		0.93	35.8	17.6	6.0
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	365			1.4	0.2	< 0.1	28.2	0.1		0.25	20.8	15.6	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	265		0.5	2.9	0.4	0.3	142	0.6			754	14.9	2.4
SdAR-M2 (U.S.G.S.) Cert	236.0000		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	249		0.5	2.8	0.4	0.3	138	0.5			730	15.3	2.5
SdAR-M2 (U.S.G.S.) Cert	236.0000		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													
E837191 Orig													
E837191 Dup													
E837198 Orig	26.3	0.1	0.2	1.1	0.2	0.3	269	0.2	< 0.001	0.43	15.5	9.5	4.4
E837198 Dup	19.4	0.1	0.2	1.1	0.2	0.3	277	0.2	< 0.001	0.43	15.2	9.6	1.6
E837200 Orig	80.0	< 0.1	0.2	1.2	0.2	0.2	230	27.3	< 0.001	0.87	38.7	74.9	4.5
E837200 Dup	84.0	< 0.1	0.2	1.2	0.2	0.3	227	31.8	< 0.001	0.87	39.5	84.6	4.9
E837211 Orig													
E837211 Dup													
E837225 Orig													
E837225 Dup													
Method Blank	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.6	< 0.1	< 0.001	< 0.05	< 0.5	0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10880  
**Invoice Date:** 10-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

50 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-10880**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

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  
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**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10880  
**Invoice Date:** 10-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

50 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-10880**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-10880

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837081	< 0.005	< 1	14.6	2.22	0.63	6.19	1.41	1.85	< 0.1	61	64.2	349	2.92	0.2	24.8	0.9	1.3	0.3	50	< 0.05	1.03	7.4	0.55
E837082	0.025	< 1	27.4	1.47	0.71	5.60	0.96	1.53	0.1	141	183	596	9.47	9.5	31.8	1.4	1.0	0.5	20	< 0.05	1.84	11.5	0.64
E837083	< 0.005	< 1	21.7	1.91	0.75	7.11	1.22	1.70	< 0.1	64	97.9	435	4.34	4.3	35.5	1.2	1.3	0.3	40	< 0.05	1.49	11.9	0.66
E837084	0.006	< 1	27.2	2.21	0.76	7.12	1.25	1.81	< 0.1	64	72.4	385	4.03	3.1	29.7	0.9	1.2	0.3	40	0.30	2.22	8.2	0.50
E837085	< 0.005	< 1	46.0	1.94	0.95	7.12	1.00	1.84	< 0.1	82	85.5	450	5.61	5.3	38.8	1.0	1.2	0.3	30	< 0.05	2.53	12.5	0.53
E837086	< 0.005	4	11.3	2.28	0.46	6.78	1.47	1.61	< 0.1	44	37.1	232	2.02	2.2	17.1	0.8	1.2	0.2	10	< 0.05	0.94	5.3	0.51
E837087	< 0.005	< 1	17.9	2.09	0.54	6.80	1.28	1.63	< 0.1	51	39.3	284	2.79	0.2	23.5	0.8	1.3	0.2	60	< 0.05	1.18	7.6	0.51
E837088	< 0.005	< 1	15.2	2.15	0.62	6.50	1.30	1.84	< 0.1	62	61.6	313	2.89	0.2	21.0	1.0	1.2	0.3	70	< 0.05	1.13	6.4	0.58
E837089	< 0.005	< 1	13.9	2.66	0.69	6.24	1.45	2.11	< 0.1	38	57.9	345	1.99	0.2	21.2	1.1	1.1	0.4	50	< 0.05	0.56	6.4	0.67
E837090	3.30	< 1	6.0	1.40	1.26	5.09	1.83	2.90	< 0.1	36	51.9	508	3.28	0.3	27.8	1.6	0.9	0.5	40	1.27	18.3	14.7	0.60
E837301	< 0.005	< 1	49.9	2.55	0.99	8.07	1.38	2.00	< 0.1	41	44.6	435	3.68	3.2	46.8	0.9	1.3	0.3	50	< 0.05	2.85	15.2	0.57
E837302	< 0.005	< 1	38.9	2.57	0.97	7.54	1.52	1.82	< 0.1	54	67.8	398	4.27	3.6	40.8	0.9	1.2	0.3	30	< 0.05	2.52	12.1	0.68
E837303	< 0.005	< 1	27.0	1.77	0.67	6.86	1.20	1.45	< 0.1	71	86.8	361	4.27	4.4	31.9	1.0	1.2	0.3	20	< 0.05	1.74	9.7	0.53
E837304	< 0.005	< 1	21.9	1.92	0.65	7.02	1.31	1.54	< 0.1	65	83.3	317	3.38	2.1	28.3	1.0	1.1	0.3	70	< 0.05	1.66	9.0	0.54
E837305	< 0.005	18	46.9	1.62	0.77	7.47	1.13	1.19	0.1	104	65.4	418	4.94	4.5	32.5	0.9	1.3	0.3	100	< 0.05	2.97	11.4	0.43
E837306	0.007	15	29.9	2.61	0.75	7.89	1.54	1.68	< 0.1	65	50.1	359	3.32	2.5	33.2	0.9	1.4	0.3	90	< 0.05	1.75	10.6	0.48
E837307	< 0.005	< 1	37.1	2.15	0.79	7.78	1.30	1.70	< 0.1	62	62.3	402	4.37	2.7	38.7	1.0	1.4	0.3	90	0.07	2.31	11.0	0.50
E837308	0.009	< 1	18.2	> 3.00	0.47	8.34	2.05	1.87	< 0.1	35	18.1	183	1.67	0.5	22.0	0.5	1.4	0.1	60	< 0.05	1.36	5.6	0.41
E837309	0.007	< 1	21.1	2.54	0.84	7.33	1.43	2.16	< 0.1	25	56.8	373	2.80	1.5	27.4	1.1	1.3	0.3	40	< 0.05	2.00	7.5	0.60
E837310	2.86	< 1	6.6	1.57	1.37	5.62	2.35	3.00	< 0.1	43	51.1	528	3.49	0.8	29.3	1.5	1.1	0.5	40	1.30	18.5	15.6	0.62
E837311	< 0.005	< 1	19.1	2.09	0.82	5.88	1.29	2.41	< 0.1	33	84.3	444	2.41	3.2	30.1	1.3	1.1	0.4	20	< 0.05	1.03	8.7	0.76
E837312	< 0.005	< 1	18.9	2.62	1.13	6.75	1.36	2.69	< 0.1	75	90.7	643	4.36	2.9	32.2	1.6	1.2	0.5	10	< 0.05	0.98	11.8	0.83
E837313	< 0.005	< 1	29.5	2.85	1.03	7.49	1.59	2.38	< 0.1	71	91.3	547	3.80	3.1	37.1	1.1	1.3	0.3	< 10	< 0.05	1.33	11.1	0.63
E837314	0.010	< 1	16.6	2.25	0.70	6.31	1.34	1.94	0.1	110	152	635	5.70	8.5	27.0	1.5	1.2	0.5	< 10	< 0.05	0.81	10.0	0.77
E837315	< 0.005	< 1	19.7	2.39	0.64	6.57	1.74	1.63	< 0.1	49	47.9	285	2.22	3.3	24.9	0.9	1.3	0.2	10	< 0.05	1.12	8.1	0.53
E837316	< 0.005	26	24.8	2.31	0.65	6.50	1.25	1.61	< 0.1	58	56.5	356	2.43	3.0	26.4	0.8	1.3	0.2	50	< 0.05	1.57	8.1	0.46
E837317	< 0.005	17	36.8	1.94	0.84	7.09	1.96	1.18	< 0.1	47	45.8	314	3.24	3.6	29.6	1.0	1.3	0.3	50	< 0.05	2.17	10.8	0.50
E837318	< 0.005	< 1	28.7	2.00	0.67	6.80	1.48	1.61	0.1	84	72.8	338	4.08	0.7	28.5	1.0	1.2	0.3	90	< 0.05	1.78	9.5	0.55
E837319	< 0.005	< 1	28.2	2.02	0.66	6.75	1.47	1.54	< 0.1	56	57.9	306	3.78	0.2	27.3	1.0	1.3	0.3	50	< 0.05	1.63	9.1	0.51
E837320	< 0.005	< 1	16.1	2.47	0.22	7.15	3.44	1.04	< 0.1	20	6.2	192	1.45	0.3	3.2	0.9	1.0	0.3	< 10	< 0.05	1.37	10.9	0.71
E837321	< 0.005	< 1	59.2	2.08	1.51	7.13	0.93	2.51	< 0.1	47	52.6	797	4.68	4.1	45.0	2.1	1.3	0.7	30	< 0.05	2.02	19.0	1.23
E837322	0.011	< 1	25.3	2.71	0.67	7.27	1.69	1.74	< 0.1	79	53.3	371	3.46	2.4	25.5	0.8	1.3	0.2	20	< 0.05	1.75	8.3	0.48
E837323	< 0.005	< 1	20.4	2.36	0.81	6.34	1.37	2.02	0.1	68	80.6	425	3.24	3.9	30.6	1.3	1.3	0.4	< 10	< 0.05	0.98	9.9	0.68
E837324	< 0.005	< 1	24.9	2.16	0.68	6.34	1.50	1.68	0.1	75	63.5	506	3.50	4.3	27.7	1.0	1.3	0.3	< 10	< 0.05	1.32	9.1	0.57
E837325	< 0.005	< 1	17.6	2.22	0.59	6.33	1.71	1.56	< 0.1	50	50.6	303	2.18	3.7	18.3	0.8	1.2	0.2	< 10	< 0.05	1.17	5.9	0.47
E837326	< 0.005	< 1	21.3	2.27	0.53	6.52	1.56	1.53	0.1	60	59.2	296	2.79	4.3	18.9	0.9	1.2	0.3	10	< 0.05	1.47	6.4	0.52
E837327	< 0.005	17	18.5	2.29	0.51	6.03	1.50	1.55	0.1	57	57.8	278	2.59	4.7	17.9	0.8	1.2	0.2	60	< 0.05	1.37	5.6	0.51
E837328	< 0.005	13	19.9	2.13	0.64	6.41	1.41	1.60	< 0.1	54	53.6	318	2.90	1.5	26.3	1.0	1.3	0.3	60	< 0.05	1.24	8.8	0.55
E837329	0.008	< 1	42.3	2.12	0.78	8.51	1.26	1.47	0.1	64	47.0	382	4.10	0.2	29.1	0.9	1.4	0.3	90	0.13	2.54	10.2	0.48
E837330	3.14	< 1	6.3	1.45	1.30	5.15	2.14	2.84	< 0.1	31	54.0	505	3.26	0.5	27.1	1.5	1.0	0.4	30	1.27	18.9	15.2	0.61
E837331	< 0.005	< 1	36.2	2.07	0.84	6.97	1.37	1.61	0.1	62	67.1	407	4.05	3.3	33.7	0.9	1.3	0.3	50	0.16	2.65	13.1	0.53
E837332	< 0.005	< 1	31.9	2.22	0.81	7.29	1.39	1.66	< 0.1	52	47.3	333	3.04	3.3	32.7	1.0	1.4	0.3	50	< 0.05	1.99	12.0	0.59
E837333	< 0.005	< 1	19.1	2.08	0.53	6.59	1.63	1.51	< 0.1	59	50.2	273	2.62	4.6	22.8	1.0	1.3	0.3	< 10	< 0.05	1.15	7.6	0.52

Results

Activation Laboratories Ltd.

Report: A17-10880

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837334	< 0.005	< 1	46.8	1.57	0.87	8.02	0.98	1.75	0.2	123	127	623	5.68	4.4	34.6	1.3	1.4	0.3	< 10	< 0.05	2.38	15.1	0.57
E837335	< 0.005	< 1	41.5	2.14	0.78	7.58	1.37	1.61	0.1	78	60.2	392	4.15	3.8	32.3	0.9	1.4	0.3	20	0.15	3.10	10.9	0.51
E837336	< 0.005	1	29.3	1.72	0.69	7.06	1.15	1.61	0.1	85	82.3	390	4.36	0.2	30.3	1.0	1.2	0.3	90	0.15	2.53	10.4	0.57
E837337	< 0.005	< 1	10.9	2.45	0.50	6.84	1.66	1.74	< 0.1	39	43.7	246	1.88	0.6	19.4	0.9	1.2	0.3	50	< 0.05	0.81	6.1	0.56
E837338	< 0.005	< 1	24.3	2.30	0.69	7.46	1.38	1.74	< 0.1	53	48.3	364	2.97	1.2	24.7	1.0	5.0	0.3	30	< 0.05	1.77	8.7	0.54
E837339	< 0.005	< 1	36.8	1.99	0.94	7.61	1.21	1.71	< 0.1	64	94.3	479	5.34	3.8	35.9	1.1	1.3	0.4	60	< 0.05	2.65	13.8	0.65
E837340	< 0.005	< 1	16.0	2.53	0.26	7.42	3.88	1.18	< 0.1	24	6.6	252	1.76	0.5	4.2	1.4	1.1	0.5	< 10	0.09	1.34	20.1	0.85
GXR-1 Meas		< 1	7.0	0.04	0.19	1.73	0.04	0.80	2.6	77	9.9	851	23.7	0.5	40.0		0.8		820	33.5	2.99	7.6	0.59
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		< 1	10.7	0.51	1.71	6.40	4.12	0.96	0.2	86	42.8	155	3.07	1.4	41.7		2.0		< 10	3.72	2.65	13.9	1.28
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		< 1	32.0	1.44	0.96	7.81	2.59	0.94		35	34.8	806	4.57	0.9	34.8	3.5	2.6	1.1	50		3.76	17.0	1.35
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		< 1	33.9	0.09	0.61	> 10.0	2.01	0.16	< 0.1	156	57.7	1060	5.93	2.4	25.8		1.1		10	0.25	4.31	14.0	0.65
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.0							143	126				271							55.4	0.53
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas			155						0.3	215	87.9			3.5	90.6	3.6	2.9	1.2			8.32	22.3	1.78
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			19.8	0.09	0.23	7.30	0.40	0.18		115	448	472	14.1	2.3	237	1.3	0.7	0.4			3.71	29.6	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			19.1						5.3	24	33.2			1.7	55.0	3.0	7.2	0.9	1180		1.73	13.4	1.25
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			19.1						4.9	23	35.6			3.8	52.3	3.1	7.3	0.9	200		1.76	13.6	1.20
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 220 (Fire Assay) Meas	0.845																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 220 (Fire Assay) Meas	0.848																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 222(FIRE ASSAY) Meas	1.21																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
OREAS 222(FIRE ASSAY) Meas	1.18																						

Results

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	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert	1.22																						
E837086 Orig		4	11.3	2.28	0.46	6.78	1.47	1.61	< 0.1	44	37.1	232	2.02	2.2	17.1	0.8	1.2	0.2	10	< 0.05	0.94	5.3	0.51
E837086 Dup		< 1	10.8	2.35	0.45	6.90	1.53	1.55	< 0.1	43	38.2	219	1.94	2.7	16.4	0.7	1.2	0.2	10	< 0.05	0.93	5.1	0.48
E837089 Orig	< 0.005																						
E837089 Dup	< 0.005																						
E837301 Orig		< 1	49.9	2.55	0.99	8.07	1.38	2.00	< 0.1	41	44.6	435	3.68	3.2	46.8	0.9	1.3	0.3	50	< 0.05	2.85	15.2	0.57
E837301 Dup		< 1	48.7	2.55	0.95	8.04	1.42	1.94	0.1	34	52.3	410	3.60	2.5	46.2	1.0	1.3	0.3	70	< 0.05	2.78	15.0	0.54
E837311 Orig	< 0.005																						
E837311 Dup	< 0.005																						
E837320 Orig	< 0.005																						
E837320 Dup	< 0.005																						
E837332 Orig		< 1	31.9	2.22	0.81	7.29	1.39	1.66	< 0.1	52	47.3	333	3.04	3.3	32.7	1.0	1.4	0.3	50	< 0.05	1.99	12.0	0.59
E837332 Dup		< 1	31.9	2.26	0.81	7.30	1.42	1.69	0.1	47	46.7	336	3.00	3.8	32.9	1.1	1.4	0.3	40	< 0.05	1.85	11.9	0.59
E837335 Orig	< 0.005																						
E837335 Dup	< 0.005																						
Method Blank			< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	8.0	26	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	0.12	< 0.01	0.01	< 0.1	< 1	5.1	16	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	8.3	15	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	16.4	30	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837081	0.10	< 0.1	36.5	14.9	0.8	46.9	9.0	15	1.7	0.43	< 0.1	< 1	< 0.1	< 0.1	493	12.6	26.7	3.0	12.1	1.8	1.8	0.3	1.7
E837082	0.22	< 0.1	54.3	22.9	< 0.1	36.6	13.0	387	0.3	0.22	< 0.1	< 1	< 0.1	< 0.1	335	36.4	71.8	7.4	27.1	3.5	3.2	0.5	2.4
E837083	0.13	< 0.1	48.5	14.2	0.1	43.0	10.2	182	0.6	0.20	< 0.1	< 1	< 0.1	< 0.1	415	27.7	54.2	5.5	19.9	3.1	2.4	0.4	1.9
E837084	0.17	< 0.1	64.5	20.4	0.9	51.4	8.8	126	0.4	0.41	< 0.1	1	< 0.1	< 0.1	414	14.2	29.4	3.2	12.7	2.4	2.1	0.3	1.6
E837085	0.23	< 0.1	80.6	22.7	0.8	41.9	9.0	214	1.4	0.51	< 0.1	1	< 0.1	< 0.1	362	13.1	27.8	2.8	10.6	1.7	1.8	0.3	1.6
E837086	0.09	< 0.1	24.7	12.5	< 0.1	41.2	7.1	100	4.6	0.24	< 0.1	< 1	0.1	< 0.1	498	10.1	22.1	2.5	9.6	1.4	1.5	0.2	1.3
E837087	0.10	< 0.1	33.4	13.9	0.8	43.9	7.2	13	2.0	0.41	< 0.1	< 1	< 0.1	< 0.1	415	9.2	20.7	2.3	8.9	1.5	1.4	0.3	1.3
E837088	0.12	< 0.1	31.5	15.5	0.2	40.7	8.9	22	1.5	0.30	< 0.1	< 1	< 0.1	< 0.1	427	16.3	35.7	3.8	14.1	3.0	2.2	0.3	1.7
E837089	0.07	< 0.1	25.4	11.5	2.1	41.4	10.2	16	0.4	0.06	< 0.1	< 1	< 0.1	< 0.1	478	18.8	39.7	4.2	16.1	2.4	2.3	0.4	1.8
E837090	0.70	< 0.1	50.9	16.3	3.8	465	12.8	14	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	56	3.7	9.7	1.2	6.2	1.5	2.4	0.4	2.6
E837301	0.16	< 0.1	81.5	18.5	0.3	60.4	8.5	127	0.7	0.81	< 0.1	< 1	< 0.1	< 0.1	491	21.9	47.8	3.9	13.2	1.8	1.9	0.3	1.5
E837302	0.16	< 0.1	65.6	18.8	0.7	58.2	7.8	134	1.5	0.51	< 0.1	1	< 0.1	< 0.1	494	20.1	45.5	4.8	18.6	2.9	2.2	0.3	1.5
E837303	0.14	< 0.1	64.3	15.9	0.2	39.5	9.0	179	1.7	0.49	< 0.1	1	0.1	< 0.1	416	17.6	37.7	4.0	14.7	2.3	2.2	0.3	1.8
E837304	0.14	< 0.1	42.0	14.3	1.0	43.4	8.8	120	4.7	0.55	< 0.1	1	0.1	< 0.1	440	15.0	31.1	3.4	12.7	2.2	2.0	0.3	1.8
E837305	0.23	0.2	93.0	22.7	3.4	48.2	7.9	195	6.3	1.30	< 0.1	1	0.2	< 0.1	366	10.7	22.4	2.3	8.8	1.1	1.6	0.2	1.4
E837306	0.15	< 0.1	52.4	17.4	1.5	55.1	8.2	98	2.5	0.78	< 0.1	1	< 0.1	< 0.1	518	13.4	29.2	2.8	10.5	1.6	1.7	0.3	1.5

## Results

## Activation Laboratories Ltd.

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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837307	0.18	< 0.1	67.9	18.0	1.4	50.5	9.3	119	0.2	0.14	< 0.1	< 1	< 0.1	< 0.1	440	10.6	22.5	2.5	9.8	1.5	1.9	0.3	1.8
E837308	0.09	< 0.1	29.0	16.3	0.4	60.0	4.5	33	2.2	0.51	< 0.1	< 1	0.1	< 0.1	666	8.7	17.0	1.6	6.0	0.9	1.0	0.1	0.9
E837309	0.17	< 0.1	46.8	20.9	11.8	45.2	9.4	59	< 0.1	0.06	< 0.1	< 1	< 0.1	< 0.1	451	11.5	24.4	2.7	10.3	2.1	1.8	0.3	1.8
E837310	0.83	< 0.1	51.3	16.7	3.7	545	13.4	31	< 0.1	0.36	< 0.1	< 1	0.1	< 0.1	54	3.8	9.8	1.3	6.1	1.8	2.5	0.5	2.7
E837311	0.11	< 0.1	41.2	13.3	< 0.1	40.0	12.2	125	0.3	0.07	< 0.1	< 1	< 0.1	< 0.1	423	20.0	37.6	4.9	18.5	2.9	2.7	0.4	2.3
E837312	0.16	< 0.1	43.8	17.4	0.3	48.7	14.1	116	2.2	0.25	< 0.1	1	< 0.1	< 0.1	431	13.4	33.8	3.7	15.1	3.2	2.9	0.5	2.6
E837313	0.16	< 0.1	43.0	18.3	1.2	58.2	10.3	112	2.6	0.39	< 0.1	< 1	< 0.1	< 0.1	534	16.8	38.9	3.8	14.4	2.4	2.2	0.3	1.9
E837314	0.12	< 0.1	44.1	14.0	0.2	44.0	14.6	344	9.2	0.55	< 0.1	1	< 0.1	< 0.1	439	31.1	69.1	7.2	26.7	4.5	3.9	0.6	3.1
E837315	0.10	< 0.1	30.9	12.1	0.5	53.9	8.1	139	3.6	0.49	< 0.1	< 1	< 0.1	< 0.1	559	11.9	26.6	2.8	10.6	1.7	1.8	0.3	1.4
E837316	0.11	< 0.1	33.5	14.2	0.7	48.9	7.0	122	6.4	0.39	< 0.1	< 1	0.1	< 0.1	541	9.2	20.4	2.2	8.7	1.6	1.4	0.2	1.2
E837317	0.13	< 0.1	44.6	13.2	0.6	72.1	8.6	147	1.1	0.12	< 0.1	< 1	< 0.1	< 0.1	601	14.3	33.4	3.2	12.2	2.2	1.8	0.3	1.5
E837318	0.15	< 0.1	39.6	16.7	1.8	56.6	9.1	71	2.8	0.59	< 0.1	< 1	< 0.1	< 0.1	498	20.8	43.6	4.6	16.5	2.6	2.2	0.3	1.8
E837319	0.14	< 0.1	38.2	15.4	1.0	54.2	8.5	20	0.3	0.20	< 0.1	< 1	< 0.1	< 0.1	485	15.6	34.5	3.6	13.6	2.0	2.0	0.3	1.5
E837320	0.04	< 0.1	37.9	12.4	< 0.1	98.4	10.3	21	1.2	0.99	< 0.1	< 1	< 0.1	< 0.1	1000	92.5	188	18.9	65.2	7.8	5.7	0.6	2.6
E837321	0.23	< 0.1	94.6	18.3	0.2	46.7	19.9	166	0.6	0.12	< 0.1	< 1	< 0.1	< 0.1	313	40.0	87.5	9.7	36.0	6.0	5.0	0.7	3.8
E837322	0.19	< 0.1	52.6	22.6	2.5	64.6	6.3	96	2.0	1.07	< 0.1	1	< 0.1	< 0.1	547	10.0	21.2	2.2	7.7	1.7	1.2	0.2	1.1
E837323	0.12	< 0.1	41.6	14.6	0.8	45.3	11.3	165	7.1	0.38	< 0.1	1	0.1	< 0.1	442	12.5	29.5	3.3	13.3	2.6	2.3	0.4	2.0
E837324	0.13	< 0.1	47.4	13.5	1.0	48.9	9.8	174	7.5	0.58	< 0.1	1	0.2	< 0.1	492	20.8	47.1	4.7	17.2	2.6	2.4	0.3	1.9
E837325	0.09	< 0.1	27.0	12.9	< 0.1	57.1	7.8	158	3.2	0.26	< 0.1	< 1	< 0.1	< 0.1	515	11.0	24.2	2.6	10.1	1.8	1.7	0.3	1.4
E837326	0.12	< 0.1	38.1	13.9	0.7	50.1	8.5	184	5.6	0.46	< 0.1	1	0.1	< 0.1	508	11.4	25.2	2.8	10.7	1.7	1.8	0.3	1.6
E837327	0.11	< 0.1	32.3	13.9	0.7	45.7	7.6	195	7.0	0.41	< 0.1	< 1	0.2	< 0.1	505	9.4	20.1	2.3	8.9	1.4	1.6	0.2	1.5
E837328	0.11	< 0.1	38.6	13.3	< 0.1	41.1	9.5	102	4.5	0.37	< 0.1	< 1	< 0.1	< 0.1	468	14.8	30.9	3.3	12.5	1.9	1.8	0.3	1.6
E837329	0.18	< 0.1	96.5	20.1	0.3	52.8	7.9	17	0.6	0.21	< 0.1	< 1	< 0.1	< 0.1	420	13.9	27.5	2.8	10.0	1.8	1.8	0.3	1.4
E837330	0.79	< 0.1	51.2	16.1	3.9	519	12.9	20	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	56	3.8	9.8	1.3	6.4	1.4	2.4	0.5	2.5
E837331	0.16	< 0.1	78.5	16.4	1.0	62.7	8.9	147	1.0	0.41	< 0.1	< 1	< 0.1	< 0.1	444	17.0	35.7	3.6	13.3	2.0	1.9	0.3	1.7
E837332	0.12	< 0.1	55.3	14.3	0.5	51.5	9.4	140	3.7	0.42	< 0.1	1	< 0.1	< 0.1	482	22.8	45.9	4.5	15.9	2.5	2.2	0.3	1.7
E837333	0.11	< 0.1	28.8	14.6	0.3	47.9	8.1	197	4.7	0.39	< 0.1	< 1	0.1	< 0.1	528	11.6	25.1	2.8	10.6	1.6	1.7	0.3	1.6
E837334	0.24	< 0.1	82.7	19.8	3.0	44.9	10.2	171	9.5	0.83	< 0.1	1	0.3	< 0.1	342	17.5	37.2	3.8	14.1	2.2	2.1	0.4	1.9
E837335	0.17	< 0.1	97.7	18.1	2.8	58.5	8.1	151	6.3	0.82	< 0.1	1	0.1	< 0.1	469	12.2	25.3	2.7	9.9	1.9	1.6	0.3	1.5
E837336	0.29	< 0.1	89.3	17.3	< 0.1	47.5	9.3	27	0.7	1.43	< 0.1	< 1	< 0.1	< 0.1	414	29.6	60.9	6.0	20.8	3.2	2.3	0.3	1.8
E837337	0.08	< 0.1	22.9	11.2	1.2	43.3	8.2	69	2.9	0.34	< 0.1	< 1	< 0.1	< 0.1	545	14.0	29.4	3.2	12.2	2.1	1.9	0.3	1.5
E837338	0.13	< 0.1	61.9	15.3	1.4	48.0	8.8	74	3.9	0.37	< 0.1	< 1	0.2	< 0.1	485	16.7	34.7	3.3	12.8	2.0	1.8	0.3	1.6
E837339	0.20	< 0.1	78.4	20.0	0.6	50.4	10.9	151	0.4	0.18	< 0.1	< 1	< 0.1	< 0.1	446	18.3	38.1	3.9	14.7	2.8	2.5	0.4	2.0
E837340	0.04	< 0.1	47.5	13.3	< 0.1	116	14.5	55	3.0	0.80	< 0.1	< 1	< 0.1	< 0.1	1030	92.2	197	20.3	73.6	10.7	7.2	0.8	3.5
GXR-1 Meas	1420	14.0	756	7.5	440	2.4	27.0	20	0.7	17.5	0.8	25	39.4	11.6	716	7.5	15.9		8.4	3.0	4.0	0.9	4.8
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	17.4	5.5	65.6	10.8	107	134	13.8	51	9.5	311	0.2	7	5.0	1.0	1330	57.9	111		41.3	5.6	4.5	0.6	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			98.7	19.3	< 0.1	104		33	0.3			< 1	< 0.1		628	37.1	86.1		37.9	6.7	6.3	1.1	5.9
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.19	0.3	133	23.9	312	77.4	12.7	92	0.8	1.04	< 0.1	< 1	0.5	< 0.1	1310	12.5	37.5		12.7	2.2	2.3	0.4	2.3



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			62.2	14.2		3.2	15.9	39	1.4				0.6		107	3.4			4.9				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.68		196	25.1	25.8	131	31.8	131	14.5	2.26		3	1.1	840	49.1	111	12.5	48.8	10.0	7.8	1.3	6.7	
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01	788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	
OREAS 45d (4-Acid) Meas	0.32		41.3	22.4	6.6	35.8	10.3	91	0.4	0.60	< 0.1	< 1	< 0.1		188	16.0	37.3	3.6	14.1	2.6	2.3	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	0.98		835	16.5		114	25.8	77	5.6	11.3					1040	44.9	101	10.3	38.1	6.5	5.7	1.0	5.1
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	0.99		771	12.9		111	25.3	124	9.6	11.5					1020	43.4	99.7	10.0	36.7	6.8	5.4	0.9	4.8
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
E837086 Orig	0.09	< 0.1	24.7	12.5	< 0.1	41.2	7.1	100	4.6	0.24	< 0.1	< 1	0.1	< 0.1	498	10.1	22.1	2.5	9.6	1.4	1.5	0.2	1.3
E837086 Dup	0.08	0.1	24.9	13.4	0.5	40.6	6.7	114	4.7	0.28	< 0.1	< 1	0.1	< 0.1	486	9.2	19.8	2.2	8.4	1.5	1.3	0.2	1.2
E837089 Orig																							
E837089 Dup																							
E837301 Orig	0.16	< 0.1	81.5	18.5	0.3	60.4	8.5	127	0.7	0.81	< 0.1	< 1	< 0.1	< 0.1	491	21.9	47.8	3.9	13.2	1.8	1.9	0.3	1.5
E837301 Dup	0.14	< 0.1	77.8	18.3	1.0	57.7	8.0	98	0.3	0.33	< 0.1	< 1	< 0.1	< 0.1	478	20.4	43.8	3.4	12.1	2.0	2.0	0.3	1.5
E837311 Orig																							
E837311 Dup																							
E837320 Orig																							
E837320 Dup																							
E837332 Orig	0.12	< 0.1	55.3	14.3	0.5	51.5	9.4	140	3.7	0.42	< 0.1	1	< 0.1	< 0.1	482	22.8	45.9	4.5	15.9	2.5	2.2	0.3	1.7
E837332 Dup	0.13	< 0.1	52.3	14.8	1.1	48.8	9.1	149	1.4	0.28	< 0.1	< 1	< 0.1	< 0.1	478	19.3	39.4	3.8	13.6	2.2	2.1	0.3	1.6
E837335 Orig																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837335 Dup																							
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	0.3	0.2	< 0.1	0.3	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	3	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837081	5.2	< 0.1	0.2	1.0	0.2	< 0.1	267	0.1	< 0.001	0.24	13.2	5.0	1.1
E837082	10.8	< 0.1	0.2	1.5	0.3	< 0.1	175	0.1	< 0.001	0.23	18.1	21.7	2.0
E837083	20.4	< 0.1	0.2	1.1	0.2	< 0.1	225	< 0.1	< 0.001	0.26	14.2	14.0	1.4
E837084	10.1	0.1	0.1	0.9	0.1	< 0.1	231	< 0.1	< 0.001	0.30	15.1	8.4	1.1
E837085	22.2	0.2	0.2	1.0	0.2	< 0.1	241	< 0.1	< 0.001	0.30	17.6	6.9	1.4
E837086	3.8	< 0.1	0.1	0.8	0.1	0.2	263	0.4	< 0.001	0.23	13.1	4.2	0.7
E837087	6.4	< 0.1	0.1	0.7	0.1	< 0.1	244	0.2	< 0.001	0.24	12.7	4.0	0.8
E837088	4.0	< 0.1	0.1	0.9	0.2	< 0.1	250	0.1	< 0.001	0.23	13.5	8.9	1.1
E837089	3.7	< 0.1	0.2	1.1	0.2	< 0.1	288	< 0.1	< 0.001	0.21	10.8	5.6	1.1
E837090	35.6	< 0.1	0.2	1.2	0.2	< 0.1	85.5	< 0.1	< 0.001	5.27	7.8	0.7	0.2
E837301	30.1	< 0.1	0.1	0.8	0.1	< 0.1	265	< 0.1	0.003	0.41	16.8	8.0	1.2
E837302	18.4	< 0.1	0.1	0.8	0.1	< 0.1	252	< 0.1	< 0.001	0.37	15.8	8.6	1.3
E837303	12.0	< 0.1	0.2	1.0	0.1	< 0.1	198	6.7	< 0.001	0.28	15.3	11.6	1.4
E837304	11.0	< 0.1	0.1	0.9	0.1	0.2	222	2.4	< 0.001	0.27	13.6	7.2	1.2
E837305	15.1	< 0.1	0.1	0.9	0.1	0.3	159	0.6	< 0.001	0.33	19.3	7.2	1.2
E837306	10.8	< 0.1	0.1	0.8	0.1	< 0.1	251	0.2	< 0.001	0.32	16.3	7.8	1.1
E837307	13.1	< 0.1	0.2	1.1	0.2	< 0.1	222	< 0.1	< 0.001	0.30	15.2	7.4	1.4
E837308	6.4	< 0.1	< 0.1	0.5	< 0.1	< 0.1	328	0.3	< 0.001	0.35	16.1	4.3	0.9
E837309	7.5	< 0.1	0.2	1.0	0.2	< 0.1	280	< 0.1	< 0.001	0.29	16.6	4.9	1.0
E837310	41.2	< 0.1	0.2	1.3	0.2	< 0.1	90.5	< 0.1	< 0.001	5.36	7.8	0.7	0.2
E837311	6.3	< 0.1	0.2	1.3	0.2	< 0.1	245	< 0.1	< 0.001	0.24	11.1	6.2	1.5
E837312	4.6	0.1	0.2	1.4	0.2	< 0.1	283	< 0.1	< 0.001	0.21	14.2	6.4	1.0
E837313	6.2	0.2	0.2	1.1	0.2	< 0.1	290	< 0.1	< 0.001	0.28	15.9	8.0	1.2
E837314	6.1	< 0.1	0.2	1.4	0.2	0.4	258	0.4	< 0.001	0.22	15.3	38.5	3.8
E837315	5.7	< 0.1	0.1	0.8	0.1	0.2	268	0.2	< 0.001	0.28	13.0	4.3	0.8
E837316	6.1	< 0.1	0.1	0.7	0.1	0.5	255	0.5	< 0.001	0.32	13.4	3.0	0.7
E837317	14.1	< 0.1	0.1	0.9	0.1	< 0.1	231	0.1	< 0.001	0.44	14.4	5.4	1.1
E837318	9.8	< 0.1	0.1	0.9	0.1	0.1	246	0.2	< 0.001	0.28	15.6	10.3	1.2
E837319	9.3	0.1	0.1	0.9	0.1	< 0.1	237	0.2	< 0.001	0.27	14.7	9.9	1.2
E837320	39.2	< 0.1	0.1	0.7	0.1	< 0.1	223	11.7	< 0.001	0.84	38.1	65.6	4.6
E837321	22.8	< 0.1	0.3	1.8	0.3	< 0.1	240	< 0.1	< 0.001	0.29	14.3	14.0	2.0
E837322	9.4	0.4	0.1	0.7	0.1	< 0.1	274	0.1	< 0.001	0.34	17.9	5.7	1.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837323	5.8	0.1	0.2	1.1	0.2	0.4	262	0.3	< 0.001	0.24	12.9	6.0	1.0
E837324	6.3	< 0.1	0.1	1.0	0.2	0.5	237	0.6	< 0.001	0.27	15.1	8.6	1.1
E837325	3.5	0.2	0.1	0.8	0.1	0.2	254	0.2	< 0.001	0.28	11.8	4.7	0.8
E837326	8.3	< 0.1	0.2	1.0	0.1	0.2	245	0.3	< 0.001	0.28	13.2	4.9	1.2
E837327	4.7	< 0.1	0.1	0.8	0.1	0.4	240	0.5	< 0.001	0.28	13.7	4.1	0.8
E837328	8.9	< 0.1	0.2	1.0	0.2	0.8	237	0.2	< 0.001	0.25	13.4	7.4	1.6
E837329	16.9	0.2	0.1	0.9	0.1	< 0.1	221	< 0.1	< 0.001	0.32	18.0	7.1	1.4
E837330	35.2	0.1	0.2	1.2	0.2	< 0.1	85.7	< 0.1	< 0.001	5.29	8.0	0.8	0.2
E837331	14.6	< 0.1	0.1	1.0	0.1	< 0.1	227	< 0.1	< 0.001	0.34	14.9	7.8	1.5
E837332	19.3	< 0.1	0.2	0.9	0.1	0.3	248	0.2	< 0.001	0.34	14.6	10.4	1.1
E837333	5.0	< 0.1	0.1	0.9	0.2	0.3	252	0.4	< 0.001	0.26	13.6	5.2	1.0
E837334	40.7	< 0.1	0.2	1.1	0.2	0.7	185	1.0	< 0.001	0.25	19.1	11.8	1.4
E837335	12.2	< 0.1	0.1	0.9	0.1	0.2	220	0.4	0.004	0.35	17.2	7.4	1.2
E837336	20.7	< 0.1	0.2	1.0	0.2	< 0.1	206	< 0.1	0.002	0.30	16.1	18.2	1.4
E837337	6.0	< 0.1	0.1	0.8	0.1	< 0.1	283	0.2	< 0.001	0.26	12.6	5.4	0.9
E837338	12.6	< 0.1	0.2	0.9	0.1	0.2	268	1.3	< 0.001	0.32	15.7	7.8	1.0
E837339	17.6	< 0.1	0.2	1.1	0.2	< 0.1	226	< 0.1	< 0.001	0.33	16.8	7.7	1.4
E837340	66.1	< 0.1	0.2	1.1	0.2	0.2	224	30.2	< 0.001	0.89	38.5	75.0	4.2
GXR-1 Meas	1150		0.4	2.3	0.3	< 0.1	265	165		0.41	752	2.9	36.4
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2470
DH-1a Cert												910	2629
GXR-4 Meas	6400		0.2	1.1	0.1	0.6	215	38.2		3.15	47.7	23.7	5.9
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	29.9		0.6	3.1		< 0.1	162	< 0.1		0.59	22.4	12.3	2.8
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	73.7			1.7	0.3	< 0.1	36.3	0.1		2.22	101	5.8	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	95.1			1.9			135				5.4		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	33.2		0.6	3.4	0.5	1.1	172	1.7		0.93	35.8	17.6	6.0
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	365			1.4	0.2	< 0.1	28.2	0.1		0.25	20.8	15.6	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	265		0.5	2.9	0.4	0.3	142	0.6			754	14.9	2.4
SdAR-M2 (U.S.G.S.) Cert	236.0000		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	249		0.5	2.8	0.4	0.3	138	0.5			730	15.3	2.5
SdAR-M2 (U.S.G.S.) Cert	236.0000		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													
E837086 Orig	3.8	< 0.1	0.1	0.8	0.1	0.2	263	0.4	< 0.001	0.23	13.1	4.2	0.7
E837086 Dup	4.3	< 0.1	0.1	0.7	0.1	0.2	257	0.4	< 0.001	0.23	12.8	3.5	0.7
E837089 Orig													
E837089 Dup													
E837301 Orig	30.1	< 0.1	0.1	0.8	0.1	< 0.1	265	< 0.1	0.003	0.41	16.8	8.0	1.2
E837301 Dup	27.0	< 0.1	0.1	0.8	0.1	< 0.1	259	< 0.1	< 0.001	0.36	16.4	7.0	1.0
E837311 Orig													
E837311 Dup													
E837320 Orig													
E837320 Dup													
E837332 Orig	19.3	< 0.1	0.2	0.9	0.1	0.3	248	0.2	< 0.001	0.34	14.6	10.4	1.1
E837332 Dup	19.0	< 0.1	0.1	1.0	0.1	< 0.1	259	< 0.1	< 0.001	0.33	14.2	5.8	1.0
E837335 Orig													
E837335 Dup													
Method Blank	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.6	< 0.1	< 0.001	< 0.05	< 0.5	0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10882  
**Invoice Date:** 10-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

36 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-10882**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and flourishes.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5  
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**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10882  
**Invoice Date:** 10-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

36 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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## Results

## Activation Laboratories Ltd.

## Report: A17-10882

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E837231	< 0.005	< 1	37.0	1.98	0.97	6.37	1.30	1.98	< 0.1	36	55.2	449	3.27	5.8	21.5	1.2	1.2	0.4	20	< 0.05	1.60	9.4	0.93
E837232	< 0.005	< 1	28.2	1.75	1.03	5.90	1.20	1.96	0.1	94	103	622	6.15	7.4	30.0	2.0	1.1	0.6	20	< 0.05	2.03	11.7	0.71
E837233	0.005	< 1	23.4	2.15	0.94	6.89	1.34	2.03	< 0.1	109	88.4	471	5.48	3.9	29.7	1.2	1.3	0.4	10	< 0.05	2.33	9.5	0.64
E837234	< 0.005	16	20.8	2.20	0.88	6.26	1.31	2.22	0.1	93	146	526	4.91	6.4	31.3	1.4	1.1	0.4	60	< 0.05	1.21	10.0	0.64
E837235	0.006	< 1	20.2	2.51	0.65	7.58	1.53	1.96	< 0.1	43	34.3	365	2.29	1.6	26.0	1.3	1.5	0.3	60	< 0.05	1.05	9.5	0.72
E837236	< 0.005	< 1	15.3	2.42	0.81	7.10	1.33	2.19	0.1	70	53.0	399	3.22	0.3	26.0	1.2	1.4	0.3	40	< 0.05	1.00	8.3	0.67
E837237	0.226	< 1	25.9	2.10	0.74	7.18	1.29	1.69	< 0.1	70	71.1	351	3.61	1.6	28.3	1.0	1.3	0.3	50	0.11	2.05	9.1	0.58
E837238	< 0.005	< 1	40.7	2.07	0.97	7.66	1.10	1.60	0.1	60	69.0	505	5.65	3.6	35.6	1.1	1.4	0.4	30	< 0.05	2.35	13.6	0.65
E837239	< 0.005	< 1	45.0	1.85	0.84	6.88	1.16	1.45	< 0.1	108	89.4	545	7.25	7.1	29.9	1.0	1.1	0.3	20	< 0.05	2.86	13.2	0.45
E837240	< 0.005	< 1	13.2	2.36	0.20	6.38	4.07	1.11	< 0.1	24	12.5	233	1.64	6.2	4.0	1.3	0.9	0.5	< 10	< 0.05	1.12	44.7	0.74
E837241	< 0.005	< 1	9.3	2.57	0.64	6.08	1.44	1.86	< 0.1	62	73.8	358	2.77	4.6	20.1	0.9	1.0	0.3	< 10	< 0.05	0.73	6.0	0.54
E837242	< 0.005	< 1	15.6	2.22	0.58	6.41	1.66	1.59	< 0.1	44	49.2	247	2.23	4.4	22.5	0.9	1.1	0.3	< 10	< 0.05	1.00	7.1	0.51
E837243	< 0.005	< 1	12.5	2.52	0.55	6.39	1.54	1.76	< 0.1	49	50.6	327	2.12	5.2	17.2	0.9	1.1	0.3	< 10	< 0.05	0.84	7.4	0.54
E837244	< 0.005	17	10.6	2.40	0.57	6.02	1.76	1.71	< 0.1	39	47.7	293	1.64	4.8	18.5	1.1	1.2	0.4	60	< 0.05	0.81	6.0	0.70
E837245	< 0.005	24	45.5	1.69	1.17	8.00	2.03	1.61	< 0.1	70	56.8	644	3.50	3.7	42.3	1.8	1.9	0.5	60	< 0.05	4.21	13.9	0.93
E837246	0.011	< 1	4.0	0.15	0.15	3.23	0.20	2.28	1.6	18	24.1	3320	1.16	< 0.1	45.6	6.4	1.0	2.0	160	1.29	1.31	3.1	4.10
E837247	< 0.005	11	2.2	0.14	0.14	1.34	0.14	1.63	1.0	14	28.2	523	1.02	0.3	27.1	0.9	0.3	0.3	70	0.14	1.05	5.6	0.51
E837248	< 0.005	< 1	13.9	0.82	0.22	4.02	0.75	2.15	0.4	24	26.6	137	0.79	0.1	32.3	1.5	0.7	0.6	70	0.46	2.39	3.7	1.33
E837249	< 0.005	5	1.1	0.04	0.19	0.63	0.06	4.21	0.3	9	11.9	47	0.27	< 0.1	11.3	0.4	0.1	0.1	30	0.07	0.26	0.6	0.22
E837250	3.13	< 1	6.2	1.50	1.33	5.54	2.40	2.99	0.1	48	59.5	523	3.48	1.0	29.3	1.5	1.2	0.5	20	1.29	19.2	15.9	0.64
E837401	< 0.005	< 1	33.8	1.86	0.83	6.95	2.16	1.17	< 0.1	49	51.7	350	3.37	3.6	28.7	1.0	1.3	0.3	< 10	< 0.05	2.39	10.4	0.52
E837402	< 0.005	< 1	19.6	2.03	0.76	6.55	1.12	2.00	0.1	78	93.8	501	3.86	4.6	38.6	1.3	1.6	0.4	< 10	< 0.05	1.55	14.8	0.84
E837403	< 0.005	< 1	19.5	2.07	1.06	6.22	1.34	2.25	0.1	108	149	935	5.85	6.8	38.2	1.5	1.1	0.4	10	< 0.05	1.21	15.4	0.77
E837404	< 0.005	< 1	25.8	1.75	1.02	5.38	1.15	2.12	< 0.1	115	180	742	7.55	7.3	34.8	1.7	1.0	0.5	20	< 0.05	1.59	14.4	0.79
E837405	< 0.005	2	19.9	> 3.00	0.72	8.41	1.91	2.11	< 0.1	52	38.4	276	2.55	2.3	23.0	0.7	1.6	0.2	60	< 0.05	1.19	7.4	0.51
E837406	< 0.005	< 1	13.1	2.50	0.85	6.58	1.36	2.22	< 0.1	35	103	537	3.25	4.5	26.2	1.3	1.4	0.4	40	< 0.05	0.71	8.8	0.74
E837407	< 0.005	< 1	18.0	2.32	0.89	6.90	1.26	2.11	< 0.1	85	79.6	487	4.45	1.4	31.6	1.3	1.3	0.4	40	< 0.05	0.95	10.2	0.69
E837408	0.006	< 1	27.9	2.58	0.71	7.63	2.22	1.57	< 0.1	52	43.2	292	3.33	2.0	23.9	0.8	1.2	0.3	50	< 0.05	1.78	8.3	0.51
E837409	< 0.005	< 1	19.4	> 3.00	0.91	7.97	1.80	2.44	< 0.1	50	48.5	556	2.94	2.2	27.9	1.0	1.4	0.3	30	< 0.05	1.07	11.2	0.62
E837410	3.12	< 1	6.6	1.61	1.38	5.79	2.34	3.09	< 0.1	43	57.4	532	3.59	0.6	29.4	1.4	1.1	0.5	30	1.28	19.3	16.5	0.63
E837411	< 0.005	< 1	22.2	2.75	0.88	7.25	1.72	2.20	< 0.1	38	71.2	457	3.28	3.8	35.8	1.1	1.4	0.4	20	< 0.05	1.24	9.7	0.66
E837412	< 0.005	2	20.8	2.68	1.11	7.25	1.41	2.49	< 0.1	84	98.9	690	5.41	5.2	34.2	1.4	1.2	0.4	30	< 0.05	1.34	12.0	0.69
E837413	< 0.005	19	15.0	> 3.00	0.64	7.67	1.78	1.99	< 0.1	61	48.7	292	2.24	1.7	18.7	0.7	1.2	0.2	50	< 0.05	1.28	6.5	0.39
E837414	< 0.005	14	23.6	2.59	0.81	7.19	1.48	2.03	< 0.1	71	139	402	3.89	3.5	24.5	1.1	1.3	0.3	60	< 0.05	1.42	8.7	0.58
E837415	< 0.005	< 1	31.7	2.42	0.81	8.21	1.63	1.79	< 0.1	80	52.5	364	4.02	0.4	35.7	0.9	1.5	0.3	50	< 0.05	1.53	12.4	0.54
E832268	< 0.005	16	1.1	0.04	0.39	0.49	0.07	6.12	0.4	5	4.2	56	0.29	< 0.1	5.0	0.3	0.1	< 0.1	80	0.05	0.24	1.2	0.16
GXR-1 Meas		< 1	7.0	0.04	0.19	1.73	0.04	0.80	2.6	77	9.9	851	23.7	0.5	40.0		0.8		820	33.5	2.99	7.6	0.59
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		< 1	10.7	0.51	1.71	6.40	4.12	0.96	0.2	86	42.8	155	3.07	1.4	41.7		2.0		< 10	3.72	2.65	13.9	1.28
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		< 1	32.0	1.44	0.96	7.81	2.59	0.94		35	34.8	806	4.57	0.9	34.8	3.5	2.6	1.1	50		3.76	17.0	1.35

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		< 1	33.9	0.09	0.61	> 10.0	2.01	0.16	< 0.1	156	57.7	1060	5.93	2.4	25.8		1.1		10	0.25	4.31	14.0	0.65
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.0							143	126				271							55.4	0.53
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas			155						0.3	215	87.9			3.5	90.6	3.6	2.9	1.2			8.32	22.3	1.78
SBC-1 Cert			163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			19.8	0.09	0.23	7.30	0.40	0.18		115	448	472	14.1	2.3	237	1.3	0.7	0.4			3.71	29.6	0.55
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			19.1						5.3	24	33.2			1.7	55.0	3.0	7.2	0.9	1180		1.73	13.4	1.25
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
SdAR-M2 (U.S.G.S.) Meas			19.1						4.9	23	35.6			3.8	52.3	3.1	7.3	0.9	200		1.76	13.6	1.20
SdAR-M2 (U.S.G.S.) Cert			17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 220 (Fire Assay) Meas	0.867																						
OREAS 220 (Fire Assay) Cert	0.828																						
OREAS 222(FIRE ASSAY) Meas	1.24																						
OREAS 222(FIRE ASSAY) Cert	1.22																						
E837232 Orig		< 1	28.2	1.75	1.03	5.90	1.20	1.96	0.1	94	103	622	6.15	7.4	30.0	2.0	1.1	0.6	20	< 0.05	2.03	11.7	0.71
E837232 Dup		< 1	27.4	1.87	1.04	6.02	1.23	1.98	< 0.1	113	127	658	6.54	7.9	31.9	2.0	1.1	0.6	10	< 0.05	2.00	12.0	0.78
E837234 Orig		16	20.8	2.20	0.88	6.26	1.31	2.22	0.1	93	146	526	4.91	6.4	31.3	1.4	1.1	0.4	60	< 0.05	1.21	10.0	0.64
E837234 Dup		9	21.7	2.31	0.89	6.49	1.35	2.21	< 0.1	87	100	499	4.70	2.8	30.7	1.4	1.3	0.4	60	< 0.05	1.29	10.0	0.69
E837240 Orig	< 0.005																						
E837240 Dup	< 0.005																						
E837401 Orig	< 0.005																						
E837401 Dup	< 0.005																						
E837411 Orig		< 1	22.2	2.75	0.88	7.25	1.72	2.20	< 0.1	38	71.2	457	3.28	3.8	35.8	1.1	1.4	0.4	20	< 0.05	1.24	9.7	0.66
E837411 Dup		< 1	21.6	2.88	0.87	7.79	1.74	2.25	< 0.1	38	64.8	412	3.18	3.0	30.8	1.0	1.3	0.3	30	< 0.05	1.20	9.3	0.69
Method Blank			< 0.5	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.1	< 1	8.0	26	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	0.12	< 0.01	0.01	< 0.1	< 1	5.1	16	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	8.3	15	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	70	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	16.4	30	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						



## Results

## Activation Laboratories Ltd.

## Report: A17-10882

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837231	0.11	< 0.1	53.9	14.7	< 0.1	54.2	11.3	250	0.4	0.10	< 0.1	< 1	< 0.1	< 0.1	422	25.4	60.5	6.9	26.2	4.2	3.2	0.4	2.1
E837232	0.19	< 0.1	65.5	22.5	< 0.1	66.9	17.1	290	0.8	0.28	< 0.1	< 1	< 0.1	< 0.1	400	23.4	48.7	5.7	22.1	4.3	3.7	0.6	3.3
E837233	0.22	< 0.1	48.9	22.0	2.5	65.9	10.8	150	1.0	0.53	< 0.1	1	< 0.1	< 0.1	419	20.8	42.4	4.4	15.8	2.7	2.3	0.4	2.1
E837234	0.16	< 0.1	43.1	17.9	0.2	46.9	13.0	258	1.7	0.44	< 0.1	< 1	< 0.1	< 0.1	450	17.3	40.7	4.5	17.6	2.7	3.1	0.5	2.4
E837235	0.10	< 0.1	29.7	14.1	0.4	49.9	11.0	70	4.1	0.39	< 0.1	< 1	< 0.1	< 0.1	538	16.4	40.8	4.0	15.6	2.8	2.5	0.4	2.1
E837236	0.13	< 0.1	40.2	15.0	0.2	44.2	10.6	29	2.6	0.31	< 0.1	< 1	< 0.1	< 0.1	442	11.1	25.8	3.0	12.5	2.6	2.2	0.4	2.0
E837237	0.16	< 0.1	59.9	17.1	1.5	48.8	9.2	81	3.9	0.52	< 0.1	1	0.1	< 0.1	447	11.9	26.5	2.7	10.6	2.1	2.0	0.3	1.7
E837238	0.20	< 0.1	81.1	20.3	0.5	43.3	11.2	142	0.2	0.21	< 0.1	1	< 0.1	< 0.1	389	22.7	46.6	4.7	17.7	3.1	2.7	0.4	2.0
E837239	0.20	< 0.1	77.8	21.5	0.8	53.6	8.8	282	1.4	0.43	< 0.1	< 1	< 0.1	< 0.1	417	12.6	26.3	2.7	10.3	1.7	1.6	0.3	1.6
E837240	0.05	< 0.1	47.3	11.2	< 0.1	114	14.0	319	8.4	0.59	< 0.1	9	0.3	< 0.1	986	92.6	189	19.6	67.9	10.5	6.8	0.8	3.4
E837241	0.09	< 0.1	24.3	14.0	0.8	40.2	8.7	191	5.3	0.29	< 0.1	< 1	0.1	< 0.1	459	12.3	27.7	3.0	11.7	2.1	1.9	0.3	1.5
E837242	0.09	< 0.1	23.2	10.4	0.6	46.6	7.8	187	3.5	0.23	< 0.1	< 1	< 0.1	< 0.1	544	13.2	28.2	3.0	11.2	2.2	1.8	0.3	1.5
E837243	0.08	< 0.1	30.7	12.6	< 0.1	48.9	8.5	209	5.3	0.30	< 0.1	< 1	0.2	< 0.1	503	11.6	26.1	2.9	11.6	1.9	2.0	0.3	1.5
E837244	0.08	< 0.1	24.0	11.0	0.5	46.0	10.3	204	6.0	0.18	< 0.1	< 1	0.1	< 0.1	566	21.8	52.1	5.0	18.0	3.1	2.7	0.4	2.1
E837245	0.24	< 0.1	75.6	17.5	1.6	103	16.1	144	1.3	0.14	< 0.1	< 1	< 0.1	< 0.1	653	34.4	80.2	7.8	28.5	5.1	3.9	0.6	3.1
E837246	0.12	0.8	26.9	2.5	156	9.6	68.1	4	1.2	1.47	< 0.1	< 1	0.2	< 0.1	183	363	486	64.2	226	32.2	22.0	2.6	12.3
E837247	0.09	1.6	84.1	1.4	18.4	6.2	8.8	12	1.4	1.37	< 0.1	< 1	0.2	< 0.1	158	33.5	67.8	6.8	23.9	3.5	2.7	0.4	1.6
E837248	0.08	1.3	19.5	6.4	1.9	29.8	17.6	9	2.2	1.15	< 0.1	< 1	0.2	< 0.1	318	94.6	146	18.1	61.7	8.5	6.8	0.8	3.8
E837249	0.03	0.7	20.7	0.4	< 0.1	2.7	4.2	4	0.5	1.15	< 0.1	< 1	0.1	< 0.1	93	22.9	31.4	4.2	13.6	1.7	1.2	0.1	0.7
E837250	0.68	< 0.1	51.0	16.8	4.3	567	13.2	39	< 0.1	0.58	< 0.1	< 1	0.2	< 0.1	58	3.9	10.1	1.4	6.4	2.0	2.4	0.5	2.7
E837401	0.13	< 0.1	44.2	14.6	0.7	81.1	8.4	149	1.0	0.24	< 0.1	< 1	< 0.1	< 0.1	627	14.8	35.1	3.3	12.4	2.6	1.8	0.3	1.6
E837402	0.15	< 0.1	47.0	15.6	40.2	35.5	12.5	210	7.3	0.78	< 0.1	1	0.2	< 0.1	377	34.1	71.7	7.0	25.5	3.5	3.3	0.5	2.6
E837403	0.17	< 0.1	49.2	17.3	0.7	55.3	13.3	295	2.3	0.39	< 0.1	< 1	< 0.1	< 0.1	422	26.7	55.0	5.1	18.4	3.2	2.8	0.5	2.4
E837404	0.22	< 0.1	58.4	16.9	< 0.1	55.6	14.5	297	0.6	0.18	< 0.1	< 1	< 0.1	< 0.1	391	26.0	59.1	6.0	22.5	3.8	3.2	0.5	2.7
E837405	0.10	< 0.1	28.0	17.2	< 0.1	62.6	6.1	101	1.0	0.26	< 0.1	< 1	< 0.1	< 0.1	592	7.7	16.3	1.7	6.2	1.2	1.1	0.2	1.0
E837406	0.10	< 0.1	34.2	14.3	< 0.1	38.9	13.7	181	0.2	< 0.05	< 0.1	< 1	< 0.1	< 0.1	407	32.4	68.1	7.0	26.0	3.6	3.4	0.5	2.6
E837407	0.11	< 0.1	41.3	15.1	0.3	38.9	12.0	94	4.2	0.35	< 0.1	< 1	< 0.1	< 0.1	408	20.0	44.2	4.7	18.1	3.2	2.7	0.4	2.2
E837408	0.21	< 0.1	42.3	15.8	1.6	69.4	7.9	91	0.9	0.52	< 0.1	< 1	< 0.1	< 0.1	602	15.0	32.0	3.2	11.9	1.9	1.7	0.3	1.5
E837409	0.12	< 0.1	32.2	16.6	< 0.1	53.3	8.9	88	0.5	0.15	< 0.1	< 1	< 0.1	< 0.1	550	10.1	24.8	2.6	10.4	1.8	1.8	0.3	1.6
E837410	0.91	< 0.1	52.9	16.9	2.6	520	13.4	26	< 0.1	0.37	< 0.1	< 1	0.1	< 0.1	59	3.7	9.8	1.3	6.1	2.0	2.3	0.5	2.6
E837411	0.12	< 0.1	41.3	16.3	< 0.1	57.9	10.8	161	0.6	0.12	< 0.1	< 1	< 0.1	< 0.1	525	19.7	42.7	4.5	16.7	2.8	2.6	0.4	2.1
E837412	0.18	< 0.1	51.9	20.0	< 0.1	61.1	12.9	211	1.0	0.21	< 0.1	< 1	< 0.1	< 0.1	432	19.9	42.9	4.5	17.4	3.2	2.7	0.4	2.2
E837413	0.14	< 0.1	26.7	18.9	0.9	61.6	6.3	71	4.8	0.58	< 0.1	1	0.1	< 0.1	535	6.9	14.3	1.5	5.9	1.2	0.9	0.2	1.0
E837414	0.14	< 0.1	51.7	20.1	0.7	67.6	10.4	157	0.7	0.29	< 0.1	< 1	< 0.1	< 0.1	435	17.7	35.6	3.6	13.5	2.3	2.3	0.4	1.9
E837415	0.14	< 0.1	53.9	17.3	2.4	56.7	9.2	43	3.4	0.77	< 0.1	< 1	< 0.1	< 0.1	474	12.2	28.0	2.9	10.9	1.9	1.8	0.3	1.6
E832268	0.05	0.9	25.1	0.9	< 0.1	3.1	3.1	4	0.5	0.39	< 0.1	< 1	0.1	< 0.1	73	8.8	13.2	1.8	6.7	0.7	0.8	0.1	0.6
GXR-1 Meas	1420	14.0	756	7.5	440	2.4	27.0	20	0.7	17.5	0.8	25	39.4	11.6	716	7.5	15.9		8.4	3.0	4.0	0.9	4.8
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	17.4	5.5	65.6	10.8	107	134	13.8	51	9.5	311	0.2	7	5.0	1.0	1330	57.9	111		41.3	5.6	4.5	0.6	2.8
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			98.7	19.3	< 0.1	104		33	0.3			< 1	< 0.1		628	37.1	86.1		37.9	6.7	6.3	1.1	5.9

	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS	Td-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.19	0.3	133	23.9	312	77.4	12.7	92	0.8	1.04	< 0.1	< 1	0.5	< 0.1	1310	12.5	37.5		12.7	2.2	2.3	0.4	2.3
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			62.2	14.2		3.2	15.9	39	1.4				0.6		107	3.4			4.9				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.68		196	25.1	25.8	131	31.8	131	14.5	2.26		3	1.1		840	49.1	111	12.5	48.8	10.0	7.8	1.3	6.7
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.32		41.3	22.4	6.6	35.8	10.3	91	0.4	0.60	< 0.1	< 1	< 0.1		188	16.0	37.3	3.6	14.1	2.6	2.3	0.4	2.4
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	0.98		835	16.5		114	25.8	77	5.6	11.3					1040	44.9	101	10.3	38.1	6.5	5.7	1.0	5.1
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
SdAR-M2 (U.S.G.S.) Meas	0.99		771	12.9		111	25.3	124	9.6	11.5					1020	43.4	99.7	10.0	36.7	6.8	5.4	0.9	4.8
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 220 (Fire Assay) Meas																							
OREAS 220 (Fire Assay) Cert																							
OREAS 222(FIRE ASSAY) Meas																							
OREAS 222(FIRE ASSAY) Cert																							
E837232 Orig	0.19	< 0.1	65.5	22.5	< 0.1	66.9	17.1	290	0.8	0.28	< 0.1	< 1	< 0.1	< 0.1	400	23.4	48.7	5.7	22.1	4.3	3.7	0.6	3.3
E837232 Dup	0.18	< 0.1	62.9	22.7	< 0.1	65.1	17.1	334	0.6	0.33	< 0.1	< 1	< 0.1	< 0.1	398	24.4	53.5	5.9	23.5	3.7	3.7	0.6	3.1
E837234 Orig	0.16	< 0.1	43.1	17.9	0.2	46.9	13.0	258	1.7	0.44	< 0.1	< 1	< 0.1	< 0.1	450	17.3	40.7	4.5	17.6	2.7	3.1	0.5	2.4
E837234 Dup	0.17	< 0.1	43.4	17.7	< 0.1	51.7	11.8	162	0.7	0.42	< 0.1	< 1	< 0.1	< 0.1	459	17.7	42.2	4.5	17.2	2.7	2.5	0.4	2.2
E837240 Orig																							
E837240 Dup																							
E837401 Orig																							
E837401 Dup																							
E837411 Orig	0.12	< 0.1	41.3	16.3	< 0.1	57.9	10.8	161	0.6	0.12	< 0.1	< 1	< 0.1	< 0.1	525	19.7	42.7	4.5	16.7	2.8	2.6	0.4	2.1
E837411 Dup	0.11	< 0.1	39.0	16.4	< 0.1	57.7	9.9	130	0.5	0.11	< 0.1	< 1	< 0.1	< 0.1	521	18.3	40.7	4.3	16.9	2.4	2.3	0.4	1.9
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	0.3	0.2	< 0.1	0.3	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	3	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	0.6	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	< 0.02	< 0.1	2.7	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837231	10.2	< 0.1	0.2	1.1	0.2	< 0.1	257	< 0.1	< 0.001	0.27	13.9	7.8	1.6
E837232	13.6	< 0.1	0.3	1.9	0.3	< 0.1	222	< 0.1	< 0.001	0.27	17.2	10.9	1.6
E837233	6.8	< 0.1	0.2	1.3	0.2	< 0.1	255	< 0.1	< 0.001	0.30	18.2	10.5	1.6
E837234	4.7	< 0.1	0.2	1.5	0.2	< 0.1	278	< 0.1	< 0.001	0.25	15.4	10.9	1.6
E837235	6.2	< 0.1	0.2	1.1	0.1	0.2	297	0.2	< 0.001	0.27	15.0	8.1	5.3
E837236	3.7	< 0.1	0.2	1.1	0.2	< 0.1	277	0.1	< 0.001	0.22	13.3	9.5	3.2
E837237	12.8	0.2	0.2	1.0	0.1	0.3	238	0.3	< 0.001	0.33	14.3	5.8	1.2
E837238	20.8	< 0.1	0.2	1.2	0.2	< 0.1	227	< 0.1	< 0.001	0.31	15.8	9.2	1.4
E837239	15.0	0.2	0.2	1.1	0.2	< 0.1	199	< 0.1	< 0.001	0.42	16.5	7.0	1.5
E837240	127	< 0.1	0.2	1.0	0.2	1.7	195	158	< 0.001	0.82	38.0	67.3	3.4
E837241	3.3	< 0.1	0.1	0.9	0.1	0.2	283	0.5	< 0.001	0.21	12.5	5.7	0.8
E837242	4.4	0.3	0.1	0.8	0.1	< 0.1	251	0.2	< 0.001	0.27	12.2	4.6	0.9
E837243	3.5	< 0.1	0.1	0.9	0.1	0.3	269	0.3	< 0.001	0.25	12.9	4.6	1.0
E837244	6.2	< 0.1	0.2	1.0	0.2	0.3	272	0.4	< 0.001	0.29	12.3	6.2	0.9
E837245	22.1	< 0.1	0.3	1.6	0.2	< 0.1	207	0.2	< 0.001	0.63	19.1	15.3	2.2
E837246	112	< 0.1	0.8	4.8	0.7	< 0.1	52.6	0.5	0.004	0.21	7.2	26.7	16.7
E837247	28.5	< 0.1	0.1	0.8	0.1	< 0.1	34.2	0.3	0.003	0.14	2.6	6.1	2.5
E837248	208	< 0.1	0.2	1.3	0.2	< 0.1	117	0.5	0.002	0.28	8.3	13.1	8.5
E837249	17.2	< 0.1	< 0.1	0.3	< 0.1	< 0.1	50.7	0.1	< 0.001	< 0.05	1.0	1.7	0.8
E837250	35.4	0.2	0.2	1.3	0.2	< 0.1	87.9	< 0.1	< 0.001	5.68	8.3	0.7	0.2
E837401	10.5	0.2	0.1	0.9	0.1	< 0.1	228	< 0.1	< 0.001	0.45	14.7	5.7	1.1
E837402	6.8	< 0.1	0.2	1.3	0.2	0.4	213	0.5	< 0.001	0.22	17.6	11.0	1.3
E837403	8.5	< 0.1	0.2	1.5	0.2	< 0.1	248	< 0.1	< 0.001	0.24	16.4	11.3	1.6
E837404	10.6	< 0.1	0.3	1.7	0.3	0.6	227	< 0.1	< 0.001	0.24	16.1	9.7	1.7
E837405	4.3	< 0.1	0.1	0.7	0.1	< 0.1	341	< 0.1	< 0.001	0.30	14.6	3.6	0.8
E837406	3.7	< 0.1	0.2	1.3	0.2	< 0.1	277	0.1	< 0.001	0.21	14.3	15.0	1.4
E837407	22.8	< 0.1	0.2	1.2	0.2	0.3	267	0.2	< 0.001	0.22	13.7	9.9	1.2
E837408	8.0	< 0.1	0.1	0.8	0.1	< 0.1	253	< 0.1	< 0.001	0.42	16.7	13.2	1.3
E837409	2.9	0.1	0.2	1.0	0.1	< 0.1	320	< 0.1	< 0.001	0.27	14.6	4.7	0.9
E837410	36.5	0.2	0.2	1.2	0.2	< 0.1	90.8	< 0.1	< 0.001	5.48	8.0	0.8	0.2
E837411	12.8	< 0.1	0.2	1.1	0.2	< 0.1	302	< 0.1	< 0.001	0.30	14.7	9.2	2.7
E837412	19.2	< 0.1	0.2	1.4	0.2	< 0.1	287	< 0.1	< 0.001	0.24	17.1	10.0	1.6
E837413	3.3	< 0.1	0.1	0.9	0.1	0.3	321	0.3	< 0.001	0.30	14.7	2.7	0.6
E837414	6.5	< 0.1	0.2	1.1	0.2	< 0.1	266	< 0.1	< 0.001	0.29	16.0	9.0	1.1
E837415	8.6	< 0.1	0.2	1.0	0.1	0.1	252	0.2	< 0.001	0.30	15.5	8.2	1.2
E832268	17.9	< 0.1	< 0.1	0.3	< 0.1	< 0.1	64.8	0.1	< 0.001	0.06	0.9	2.3	7.5
GXR-1 Meas	1150		0.4	2.3	0.3	< 0.1	265	165		0.41	752	2.9	36.4
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	2470
DH-1a Cert												910	2629
GXR-4 Meas	6400		0.2	1.1	0.1	0.6	215	38.2		3.15	47.7	23.7	5.9
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	29.9		0.6	3.1		< 0.1	162	< 0.1		0.59	22.4	12.3	2.8

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	73.7			1.7	0.3	< 0.1	36.3	0.1		2.22	101	5.8	1.5
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	95.1			1.9			135				5.4		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	33.2		0.6	3.4	0.5	1.1	172	1.7		0.93	35.8	17.6	6.0
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	365			1.4	0.2	< 0.1	28.2	0.1		0.25	20.8	15.6	2.9
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	265		0.5	2.9	0.4	0.3	142	0.6			754	14.9	2.4
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas	249		0.5	2.8	0.4	0.3	138	0.5			730	15.3	2.5
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 220 (Fire Assay) Meas													
OREAS 220 (Fire Assay) Cert													
OREAS 222(FIRE ASSAY) Meas													
OREAS 222(FIRE ASSAY) Cert													
E837232 Orig	13.6	< 0.1	0.3	1.9	0.3	< 0.1	222	< 0.1	< 0.001	0.27	17.2	10.9	1.6
E837232 Dup	13.4	< 0.1	0.3	1.8	0.3	< 0.1	227	< 0.1	< 0.001	0.25	16.8	14.2	1.5
E837234 Orig	4.7	< 0.1	0.2	1.5	0.2	< 0.1	278	< 0.1	< 0.001	0.25	15.4	10.9	1.6
E837234 Dup	4.5	< 0.1	0.2	1.3	0.2	< 0.1	279	< 0.1	< 0.001	0.24	15.7	7.6	1.2
E837240 Orig													
E837240 Dup													
E837401 Orig													
E837401 Dup													
E837411 Orig	12.8	< 0.1	0.2	1.1	0.2	< 0.1	302	< 0.1	< 0.001	0.30	14.7	9.2	2.7
E837411 Dup	4.8	< 0.1	0.2	1.1	0.2	< 0.1	302	< 0.1	< 0.001	0.30	14.2	8.4	1.2
Method Blank	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.6	< 0.1	< 0.001	< 0.05	< 0.5	0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													



**Date Submitted:** 03-Oct-17  
**Invoice No.:** A17-10885  
**Invoice Date:** 21-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

22 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT      **A17-10885**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is stylized with loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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Results

Activation Laboratories Ltd.

Report: A17-10885

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS		
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu		
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm		
E835363	0.011	29	0.8	0.03	0.38	0.26	0.07	5.32	0.3	10	10.6	76	0.76	0.1	9.3	< 0.1	0.1	< 0.1	100	< 0.05	0.18	1.1	< 0.05		
E835364	0.025	21	0.7	0.02	0.33	0.22	0.06	4.53	0.1	3	5.0	128	0.29	< 0.1	3.7	< 0.1	0.1	< 0.1	90	< 0.05	0.28	0.9	< 0.05		
E835365	0.009	21	0.8	0.03	0.31	0.26	0.06	4.13	0.1	3	4.5	41	0.25	0.1	6.9	< 0.1	< 0.1	< 0.1	90	< 0.05	0.35	0.4	< 0.05		
E835366	0.014	20	< 0.5	0.01	0.20	0.12	0.03	2.93	0.1	2	2.9	183	1.04	< 0.1	1.7	< 0.1	< 0.1	< 0.1	100	< 0.05	0.12	0.4	< 0.05		
E835367	0.010	25	< 0.5	0.02	0.33	0.17	0.04	4.95	0.2	5	3.8	53	0.21	0.1	3.3	0.2	< 0.1	< 0.1	120	< 0.05	0.09	1.4	0.09		
E835368	0.010	23	1.5	0.16	0.31	0.64	0.15	4.18	0.4	23	23.7	272	0.48	0.5	7.9	0.5	0.2	0.2	170	< 0.05	0.24	4.4	0.30		
E835369	0.016	18	0.6	0.03	0.32	0.24	0.06	5.01	0.2	4	5.3	60	0.16	0.2	2.1	0.2	< 0.1	< 0.1	110	< 0.05	0.19	0.6	0.07		
E835370	3.21	6	6.1	1.43	1.26	4.82	2.04	2.44	< 0.1	75	80.7	531	3.34	1.4	24.7	1.2	0.9	0.5	60	1.02	17.0	14.2	0.61		
E837011	0.012	13	0.6	0.03	0.27	0.28	0.06	3.75	0.2	5	10.1	223	0.29	0.2	3.3	0.1	0.1	< 0.1	100	< 0.05	0.19	0.6	0.06		
E837012	0.018	15	1.1	0.04	0.26	0.36	0.08	3.48	0.2	5	8.7	434	0.39	0.2	4.3	0.1	0.1	< 0.1	110	< 0.05	0.30	0.8	0.06		
E837013	0.005	15	0.5	0.02	0.28	0.23	0.04	3.34	0.2	4	5.7	114	0.19	0.1	4.8	< 0.1	0.1	< 0.1	130	< 0.05	0.17	0.5	< 0.05		
E837014	0.011	17	0.6	0.03	0.26	0.25	0.06	3.56	0.3	5	12.0	124	0.39	0.2	9.7	0.1	< 0.1	< 0.1	110	< 0.05	0.19	0.7	0.06		
E837015	< 0.005	21	0.9	0.03	0.30	0.35	0.07	4.37	0.4	8	4.2	285	0.40	0.2	13.2	0.2	0.1	< 0.1	100	< 0.05	0.28	0.9	0.08		
E837016	0.020	12	0.7	0.03	0.12	0.92	0.06	3.34	0.5	10	19.2	126	0.24	0.1	15.5	0.9	0.3	0.3	140	0.09	0.24	1.0	0.66		
E837017	0.015	18	0.8	0.03	0.32	0.40	0.06	4.65	0.3	10	5.2	423	0.23	0.2	6.2	0.3	0.2	< 0.1	120	0.09	0.13	1.3	0.16		
E837018	0.013	18	0.6	0.03	0.17	0.49	0.05	3.95	0.3	13	11.0	81	0.35	0.2	6.3	0.3	0.2	0.1	140	< 0.05	0.15	0.7	0.20		
E837019	0.012	14	0.6	0.02	0.19	0.81	0.05	3.98	0.4	13	14.0	114	0.36	0.2	7.6	0.5	0.4	0.2	150	0.05	0.13	0.6	0.38		
E837020	< 0.005	< 1	20.7	2.68	0.28	7.49	2.46	1.04	< 0.1	23	9.4	284	1.87	1.3	3.1	0.7	1.1	0.3	60	< 0.05	1.48	8.0	0.68		
E837021	0.016	28	0.7	0.02	0.22	0.31	0.06	5.15	0.2	5	15.6	193	0.28	0.1	3.1	0.2	0.1	< 0.1	110	< 0.05	0.20	0.3	0.08		
E837022	0.013	14	0.5	0.02	0.22	0.26	0.05	4.49	0.2	4	8.0	392	0.24	0.2	3.4	0.2	0.1	< 0.1	110	< 0.05	0.18	0.6	0.08		
E837023	0.009	21	0.5	0.03	0.30	0.24	0.05	4.84	0.1	3	6.4	60	0.11	< 0.1	3.8	0.1	< 0.1	< 0.1	100	< 0.05	0.21	1.0	0.08		
E837024	0.023	29	1.2	0.02	0.36	0.35	0.04	5.03	0.1	6	3.9	58	0.11	0.1	41.8	< 0.1	< 0.1	< 0.1	90	< 0.05	0.20	0.8	0.06		
GXR-1 Meas		< 1	5.9	0.04	0.20	1.85	0.04	0.78	2.6	76	15.2	856	24.2	0.5	36.6			0.8	3070	29.9	2.65	7.1	0.58		
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0			1.22	3900	31.0	3.00	8.20	0.690		
DH-1a Meas																									
DH-1a Cert																									
GXR-4 Meas		< 1	10.8	0.54	1.76	6.67	4.02	0.95	0.2	93	46.2	181	3.31	1.4	39.5			2.0	80	3.24	2.51	14.4	1.37		
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0			1.90	110	4.00	2.80	14.6	1.63		
SDC-1 Meas		8	31.9	1.57	0.96	7.38	1.86	0.87		65	70.8	863	4.91	1.3	32.7	3.0	2.6	1.1	70		3.44	16.8	1.29		
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70		
GXR-6 Meas		< 1	34.1	0.10	0.63	> 10.0	1.83	0.16	0.1	102	50.4	980	5.66	1.7	23.5			0.9	70	0.23	3.73	12.5	0.58		
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0			1.40	68.0	1.30	4.20	13.8	0.760		
DNC-1a Meas			4.2							140	235				250								51.6	0.54	
DNC-1a Cert			5.2							148	270				247									57	0.59
SBC-1 Meas			149							0.3	215	79.5			3.4	82.0	3.2	3.2	1.2			7.50	20.9	1.74	
SBC-1 Cert			163							0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	
OREAS 45d (4-Acid) Meas			19.7	0.09	0.26	7.33	0.43	0.16		82	523	494	15.0	1.2	227	1.3	0.8	0.5				3.48	28.4	0.59	
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46				3.910	29.50	0.57	
SdAR-M2 (U.S.G.S.) Meas			17.7							4.9	25	39.9			3.9	50.6	2.7	6.9	1.0	980		1.57	13.0	1.29	
SdAR-M2 (U.S.G.S.) Cert			17.9							5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
OREAS 223 (Fire Assay) Meas	1.81																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 223 (Fire Assay) Meas	1.78																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 218 Meas	0.515																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.548																						
OREAS 218 Cert	0.531																						
E835363 Orig		29	0.8	0.03	0.38	0.26	0.07	5.32	0.3	10	10.6	76	0.76	0.1	9.3	< 0.1	0.1	< 0.1	100	< 0.05	0.18	1.1	< 0.05
E835363 Dup		26	0.7	0.03	0.35	0.28	0.06	4.97	0.2	10	11.1	80	0.72	0.1	8.4	< 0.1	< 0.1	< 0.1	120	< 0.05	0.18	1.2	0.07
E837012 Orig	0.018																						
E837012 Dup	0.010																						
E837022 Orig	0.013																						
E837022 Dup	0.007																						
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.9	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		6	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.0	8	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		6	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.9	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835363	0.12	1.0	26.3	< 0.1	2.5	2.0	1.1	6	0.5	1.61	< 0.1	< 1	0.3	< 0.1	86	2.1	4.0	0.5	1.9	0.3	0.3	< 0.1	0.2
E835364	0.10	0.5	6.3	< 0.1	0.9	2.1	0.8	3	0.4	0.64	< 0.1	< 1	0.7	< 0.1	85	1.4	2.7	0.4	1.5	0.1	0.2	< 0.1	0.2
E835365	0.09	0.6	18.5	< 0.1	5.9	2.2	0.9	5	0.5	1.10	< 0.1	< 1	1.2	< 0.1	60	1.3	2.6	0.3	1.3	< 0.1	0.2	< 0.1	0.2
E835366	0.09	0.4	17.2	< 0.1	0.4	1.1	0.6	3	0.2	1.78	< 0.1	< 1	0.2	< 0.1	49	0.9	1.5	0.2	0.9	0.1	0.1	< 0.1	0.1
E835367	0.09	0.9	7.1	< 0.1	< 0.1	1.1	1.6	4	0.3	1.95	< 0.1	< 1	0.2	< 0.1	72	3.0	3.7	0.7	3.2	0.3	0.4	< 0.1	0.3
E835368	0.09	3.7	15.6	0.1	3.3	5.2	5.5	21	0.9	2.76	< 0.1	< 1	0.4	< 0.1	122	12.5	14.6	2.8	11.9	1.2	1.4	0.2	0.9
E835369	0.08	0.9	11.3	< 0.1	< 0.1	1.8	1.5	7	0.6	0.71	< 0.1	< 1	< 0.1	< 0.1	66	2.7	3.8	0.7	2.8	0.3	0.3	< 0.1	0.3
E835370	0.93	< 0.1	47.6	14.7	5.1	418	11.7	56	0.3	2.14	< 0.1	< 1	0.2	< 0.1	52	3.6	8.7	1.2	6.6	1.6	2.3	0.4	2.2
E837011	0.07	0.6	11.7	< 0.1	0.5	1.9	1.1	6	0.6	1.31	< 0.1	< 1	0.2	< 0.1	76	1.9	3.3	0.4	1.9	0.1	0.2	< 0.1	0.2
E837012	0.08	0.6	12.9	< 0.1	< 0.1	3.0	1.3	8	0.9	1.56	< 0.1	< 1	0.2	< 0.1	77	2.1	4.0	0.5	1.9	0.1	0.3	< 0.1	0.2
E837013	0.07	0.7	5.2	< 0.1	< 0.1	1.5	1.0	4	0.5	1.68	< 0.1	< 1	0.4	< 0.1	65	1.6	2.7	0.4	1.7	0.2	0.2	< 0.1	0.2
E837014	0.07	1.1	8.4	< 0.1	0.5	1.8	1.2	6	0.6	1.54	< 0.1	< 1	0.7	< 0.1	85	1.9	3.3	0.4	1.8	0.2	0.3	< 0.1	0.2
E837015	0.08	1.2	23.1	< 0.1	0.8	2.5	1.7	7	0.7	1.49	< 0.1	< 1	1.0	< 0.1	118	2.5	4.5	0.6	2.6	0.4	0.3	< 0.1	0.3

Results

Activation Laboratories Ltd.

Report: A17-10885

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837016	0.09	1.5	5.6	< 0.1	< 0.1	2.1	9.7	10	0.7	0.56	< 0.1	< 1	0.2	< 0.1	64	45.8	77.4	8.5	33.3	3.1	2.9	0.3	1.6
E837017	0.08	1.7	3.1	< 0.1	< 0.1	1.9	2.8	18	0.5	1.74	< 0.1	< 1	0.2	< 0.1	86	6.0	10.1	1.3	5.5	0.6	0.7	< 0.1	0.5
E837018	0.07	1.0	4.5	0.2	< 0.1	1.9	3.2	7	0.6	0.78	< 0.1	< 1	< 0.1	< 0.1	45	7.5	12.2	1.8	7.1	0.9	0.8	0.1	0.6
E837019	0.07	1.3	2.2	0.7	< 0.1	1.9	6.0	9	0.6	0.53	< 0.1	< 1	0.2	< 0.1	56	15.2	25.5	3.3	13.6	1.5	1.6	0.2	1.1
E837020	0.07	< 0.1	47.8	9.6	< 0.1	99.0	8.3	132	3.5	0.95	< 0.1	1	< 0.1	< 0.1	905	69.2	133	14.1	54.7	5.9	4.5	0.4	2.1
E837021	0.07	1.1	11.5	0.3	< 0.1	2.0	1.7	4	0.5	3.01	< 0.1	< 1	< 0.1	< 0.1	40	3.1	5.3	0.8	3.1	0.3	0.4	< 0.1	0.3
E837022	0.05	0.8	9.4	< 0.1	< 0.1	1.6	1.6	7	0.4	1.01	< 0.1	< 1	< 0.1	< 0.1	59	2.8	4.6	0.8	3.2	0.5	0.3	< 0.1	0.3
E837023	0.06	0.7	9.7	< 0.1	< 0.1	1.7	1.4	9	0.5	0.86	< 0.1	< 1	0.3	< 0.1	68	2.4	4.0	0.6	2.4	0.4	0.3	< 0.1	0.2
E837024	0.05	1.1	7.3	< 0.1	12.1	1.6	1.0	2	0.3	1.48	< 0.1	< 1	3.5	< 0.1	67	1.7	2.7	0.4	1.8	0.1	0.3	< 0.1	0.2
GXR-1 Meas	1240	15.1	739	2.9	433	2.4	26.2	22	0.9	16.5	0.8	29	27.3	7.8	704	7.3	14.6		9.2	2.4	3.6	0.7	4.5
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	19.1	5.7	66.8	9.6	104	122	12.5	47	10.4	305	0.2	7	4.7	0.8	852	57.9	109		46.7	5.8	4.4	0.5	2.7
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			101	17.3	< 0.1	82.5		46	3.9			1	0.2		577	34.2	79.9		39.1	6.4	5.6	0.9	5.5
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.21	0.2	122	16.9	202	63.0	10.9	56	0.3	0.32	< 0.1	< 1	0.5	< 0.1	1390	11.2	30.8		12.8	2.1	2.0	0.3	2.1
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			60.5	13.5		2.9	14.2	38	1.4				0.5		99	3.4			5.1				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.70		188	19.1	21.7	124	29.0	124	13.7	2.50		4	1.0		798	47.6	103	12.1	52.7	8.2	7.4	1.1	6.2
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.51		42.9	22.1	4.1	36.4	10.4	46	0.9	0.29	< 0.1	< 1	< 0.1		179	16.0	35.7	3.8	15.3	2.5	2.2	0.4	2.2
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	1.02		812	8.8		107	23.5	125	18.6	10.9					1000	43.1	94.3	10.2	42.1	5.9	5.1	0.8	4.6
SdAR-M2 (U.S.G.S.) Cert	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E835363 Orig	0.12	1.0	26.3	< 0.1	2.5	2.0	1.1	6	0.5	1.61	< 0.1	< 1	0.3	< 0.1	86	2.1	4.0	0.5	1.9	0.3	0.3	< 0.1	0.2
E835363 Dup	0.11	0.9	22.0	< 0.1	0.6	1.9	1.1	8	0.5	1.53	< 0.1	< 1	0.2	< 0.1	84	1.9	3.7	0.4	2.1	0.1	0.3	< 0.1	0.2



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837012 Orig																							
E837012 Dup																							
E837022 Orig																							
E837022 Dup																							
Method Blank	0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	< 0.2	< 0.1	< 0.1	0.3	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.22	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835363	8.6	< 0.1	< 0.1	0.1	< 0.1	< 0.1	42.1	0.2	0.005	0.09	3.3	0.8	3.5
E835364	3.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.8	0.1	0.001	< 0.05	1.0	0.5	0.3
E835365	3.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	32.8	0.2	0.003	< 0.05	1.6	0.4	0.2
E835366	4.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	25.0	< 0.1	0.002	< 0.05	1.2	0.3	0.2
E835367	11.5	< 0.1	< 0.1	0.1	< 0.1	< 0.1	39.5	0.1	0.003	0.07	0.5	0.9	2.2
E835368	38.9	< 0.1	< 0.1	0.5	< 0.1	< 0.1	48.8	0.5	0.012	0.43	1.8	3.0	8.4
E835369	9.2	< 0.1	< 0.1	0.2	< 0.1	< 0.1	46.0	0.1	0.003	0.06	1.0	0.8	0.8
E835370	33.7	< 0.1	0.2	1.2	0.2	< 0.1	79.3	< 0.1	0.001	5.36	8.4	0.7	0.2
E837011	2.7	< 0.1	< 0.1	0.1	< 0.1	< 0.1	42.3	0.2	0.002	0.05	1.2	0.6	0.4
E837012	3.3	< 0.1	< 0.1	0.1	< 0.1	< 0.1	44.9	0.2	0.002	< 0.05	2.0	0.9	0.8
E837013	5.7	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.2	< 0.1	0.002	< 0.05	0.9	0.6	1.4
E837014	10.3	< 0.1	< 0.1	0.1	< 0.1	< 0.1	39.5	0.1	0.002	0.06	1.1	0.7	3.0
E837015	14.5	< 0.1	< 0.1	0.2	< 0.1	< 0.1	49.2	0.2	0.002	0.06	1.8	0.9	2.0
E837016	29.3	< 0.1	0.1	0.8	0.1	< 0.1	31.4	0.2	0.006	0.06	1.8	4.7	1.3
E837017	17.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	54.7	0.1	0.003	0.07	1.5	2.1	6.8
E837018	7.3	< 0.1	< 0.1	0.3	< 0.1	< 0.1	42.1	0.2	0.003	0.06	1.0	2.6	1.3
E837019	23.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1	42.2	0.2	0.004	0.06	1.1	3.4	2.0
E837020	20.9	< 0.1	< 0.1	0.6	< 0.1	0.1	237	12.4	< 0.001	0.85	35.9	45.5	2.6
E837021	11.9	< 0.1	< 0.1	0.2	< 0.1	< 0.1	39.9	0.2	0.011	< 0.05	1.0	0.9	0.4
E837022	5.7	< 0.1	< 0.1	0.2	< 0.1	< 0.1	40.5	0.1	0.001	< 0.05	0.9	1.5	0.3
E837023	4.8	< 0.1	< 0.1	0.1	< 0.1	< 0.1	38.8	0.1	0.001	< 0.05	1.4	1.1	0.3
E837024	10.5	< 0.1	< 0.1	0.1	< 0.1	< 0.1	40.7	0.1	0.002	0.09	0.8	0.7	5.5
GXR-1 Meas	1110		0.3	2.2	0.3	< 0.1	280	147		0.40	654	2.6	30.7
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	1950
DH-1a Cert												910	2629
GXR-4 Meas	5890		0.2	1.1	0.1	0.6	213	36.0		3.20	51.0	22.6	5.6

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	27.8		0.5	3.1		0.2	157	0.3		0.61	24.7	11.0	2.4
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	65.7			1.6	0.2	< 0.1	35.3	0.2		2.12	96.7	4.9	1.3
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	94.2			1.9			133				5.7		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	28.1		0.5	3.4	0.4	0.8	165	1.7		0.89	35.1	16.1	5.5
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	376			1.5	0.2	< 0.1	28.9	0.2		0.26	20.9	15.2	2.7
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	259		0.4	2.9	0.4	1.1	135	2.6			684	14.6	2.4
SdAR-M2 (U.S.G.S.) Cert	236.0000		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
E835363 Orig	8.6	< 0.1	< 0.1	0.1	< 0.1	< 0.1	42.1	0.2	0.005	0.09	3.3	0.8	3.5
E835363 Dup	7.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	40.8	0.1	0.005	0.09	3.2	0.7	3.3
E837012 Orig													
E837012 Dup													
E837022 Orig													
E837022 Dup													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.3	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 04-Oct-17  
**Invoice No.:** A17-10896  
**Invoice Date:** 21-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

48 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT **A17-10896**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

Emmanuel Esemé , Ph.D.  
Quality Control

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## Results

## Activation Laboratories Ltd.

## Report: A17-10896

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832422	0.009	11	0.9	0.03	0.12	0.50	0.06	2.70	0.3	11	9.3	273	0.50	0.2	9.5	0.3	0.2	0.1	90	< 0.05	0.29	2.2	0.16
E832423	0.007	3	2.0	0.09	0.19	0.94	0.10	2.50	0.4	24	46.7	2400	1.67	0.3	9.8	0.6	0.3	0.3	130	0.08	0.59	4.4	0.56
E832424	0.029	7	0.6	0.04	0.12	0.33	0.05	2.22	0.3	7	8.1	423	0.47	0.2	5.9	0.2	< 0.1	< 0.1	70	< 0.05	0.30	1.6	0.09
E832425	0.008	2	1.2	0.05	0.12	1.01	0.10	2.17	0.4	10	10.8	406	0.59	0.2	11.2	0.9	0.3	0.3	130	0.17	0.84	2.1	0.64
E832426	0.006	7	1.0	0.04	0.12	0.69	0.08	2.81	0.3	13	16.4	1280	1.10	0.4	25.6	0.5	0.2	0.2	110	0.07	0.72	7.0	0.33
E832427	0.010	8	0.6	0.03	0.11	0.56	0.06	2.46	0.2	6	11.5	276	0.78	0.4	30.4	0.6	0.2	0.2	90	< 0.05	0.45	2.3	0.30
E832428	0.010	10	0.5	0.02	0.12	0.88	0.05	2.76	0.7	12	15.1	346	0.68	0.4	51.6	1.1	0.2	0.4	140	0.12	0.36	3.6	0.70
E832429	0.008	12	0.9	0.04	0.17	0.45	0.07	3.76	0.3	5	7.3	265	0.36	0.2	8.5	0.2	0.1	< 0.1	140	< 0.05	0.38	1.1	0.10
E832430	3.25	5	5.7	1.36	1.19	4.82	1.76	2.47	< 0.1	78	77.4	499	3.26	1.2	24.2	1.3	1.0	0.5	50	1.00	17.2	14.0	0.60
E832431	0.011	13	0.7	0.03	0.23	0.39	0.06	3.31	0.2	5	8.8	99	0.36	0.1	14.3	0.2	0.2	< 0.1	160	< 0.05	0.37	1.8	0.12
E832432	0.007	14	< 0.5	0.03	0.19	0.23	0.06	3.06	0.1	3	6.9	245	0.43	0.1	6.0	0.1	< 0.1	< 0.1	100	< 0.05	0.23	1.1	0.06
E832433	0.010	8	1.0	0.02	0.16	0.44	0.06	2.39	0.1	5	5.6	564	1.01	0.2	5.2	0.3	0.1	< 0.1	70	< 0.05	0.35	3.6	0.17
E832434	0.015	6	0.8	0.03	0.15	0.35	0.07	2.31	0.3	6	16.4	1350	3.78	0.4	11.7	0.5	0.2	0.2	90	< 0.05	0.44	3.3	0.26
E832435	0.019	6	0.6	0.03	0.19	0.28	0.06	3.24	0.2	4	16.6	237	0.37	0.1	6.8	0.1	< 0.1	< 0.1	60	< 0.05	0.24	1.8	0.07
E832436	0.019	12	< 0.5	0.02	0.13	0.28	0.05	3.10	0.2	4	6.4	280	0.35	0.2	17.2	0.3	< 0.1	0.1	50	< 0.05	0.26	1.8	0.15
E832437	0.020	8	< 0.5	0.01	0.11	0.30	0.03	2.48	0.2	4	8.2	307	0.30	0.2	17.4	0.2	0.1	< 0.1	50	< 0.05	0.31	1.8	0.14
E832441	0.015	7	< 0.5	0.01	0.24	0.31	0.03	2.60	0.5	5	12.7	372	0.44	0.1	4.6	0.1	< 0.1	< 0.1	50	< 0.05	0.21	1.7	0.08
E832442	0.012	16	< 0.5	0.01	0.19	0.29	0.04	2.80	0.2	6	8.3	268	0.38	0.1	7.1	0.2	0.1	< 0.1	110	< 0.05	0.19	1.3	0.09
E832443	0.015	13	0.6	0.02	0.16	0.38	0.05	3.10	0.3	7	6.1	410	0.60	0.2	10.3	0.4	0.1	0.1	120	< 0.05	0.21	2.4	0.20
E832444	0.012	17	0.6	0.03	0.20	0.28	0.06	3.78	0.2	7	7.5	310	0.60	0.2	7.6	0.1	0.1	< 0.1	70	< 0.05	0.28	1.3	0.07
E832445	0.023	14	< 0.5	0.01	0.14	0.16	0.03	3.33	< 0.1	3	6.6	111	0.11	< 0.1	12.0	< 0.1	< 0.1	< 0.1	60	< 0.05	0.14	0.5	< 0.05
E832446	0.015	13	< 0.5	0.01	0.15	0.11	0.03	3.84	< 0.1	2	4.8	66	0.07	< 0.1	8.0	< 0.1	< 0.1	< 0.1	60	< 0.05	0.16	0.4	< 0.05
E832447	0.011	14	< 0.5	< 0.01	0.14	0.08	0.02	3.52	< 0.1	2	6.2	156	0.08	< 0.1	10.0	< 0.1	< 0.1	< 0.1	40	< 0.05	0.07	0.5	< 0.05
E832448	0.015	10	< 0.5	0.01	0.14	0.18	0.04	3.60	0.2	4	7.6	111	0.38	0.1	18.3	0.1	< 0.1	< 0.1	60	< 0.05	0.17	1.4	0.06
E832449	0.006	14	< 0.5	< 0.01	0.15	0.16	0.02	3.30	0.1	3	4.0	270	0.16	< 0.1	12.5	< 0.1	< 0.1	< 0.1	40	< 0.05	0.13	0.9	< 0.05
E832450	3.10	7	5.9	1.42	1.21	4.60	2.34	2.44	< 0.1	91	86.3	530	3.31	1.6	25.6	1.2	0.9	0.5	60	1.05	17.5	14.3	0.56
E835141	0.013	21	2.6	0.14	0.22	0.78	0.20	3.04	0.3	13	16.5	320	0.66	0.6	17.4	0.4	0.3	0.1	100	< 0.05	0.66	1.9	0.26
E835142	0.031	16	0.5	0.02	0.09	0.31	0.06	3.18	0.2	4	8.0	342	0.35	0.2	15.5	0.2	< 0.1	< 0.1	100	< 0.05	0.40	1.7	0.14
E835143	0.013	12	0.7	0.02	0.14	0.69	0.06	3.56	0.5	7	10.6	625	0.43	< 0.1	82.5	0.4	0.1	0.2	130	0.12	0.74	2.7	0.27
E835144	0.021	4	< 0.5	0.02	0.12	0.57	0.04	2.46	0.6	11	15.2	297	0.55	0.2	89.3	0.4	0.1	0.1	60	0.12	0.45	4.7	0.22
E835145	0.012	< 1	2.9	0.07	0.21	1.26	0.15	2.70	0.4	9	63.2	497	0.94	0.2	72.3	0.8	0.3	0.3	90	0.11	1.72	4.2	0.54
E835146	0.015	1	1.0	0.03	0.09	0.65	0.05	1.83	0.3	19	17.2	311	0.84	0.3	26.8	0.8	0.2	0.3	40	0.06	0.41	2.9	0.68
E835147	0.014	3	< 0.5	0.02	0.11	0.50	0.03	1.87	0.4	9	16.8	323	0.44	0.1	50.4	0.3	0.1	0.1	20	0.11	0.33	5.7	0.17
E835148	0.022	< 1	3.7	0.41	0.18	2.02	0.34	3.69	0.9	12	23.2	65	1.09	0.8	47.0	1.6	0.8	0.6	70	0.08	0.86	2.3	1.15
E835149	0.020	7	0.6	0.03	0.20	0.45	0.05	4.36	0.3	11	13.0	365	0.34	0.3	15.4	0.5	0.2	0.2	30	0.05	0.17	1.1	0.33
E835150	3.20	6	5.4	1.27	1.11	4.47	1.97	2.32	< 0.1	86	82.9	487	3.08	1.5	22.9	1.2	1.0	0.4	50	0.95	16.4	13.4	0.60
E835351	0.013	14	0.7	0.05	0.19	0.34	0.06	3.71	0.3	11	5.6	163	0.63	0.3	12.8	0.2	0.2	< 0.1	130	< 0.05	0.28	0.8	0.12
E835352	0.018	5	13.7	1.60	0.76	4.38	1.47	2.96	0.1	35	47.4	295	1.80	3.0	20.9	0.9	1.0	0.3	100	0.61	1.84	5.5	0.63
E835353	0.022	< 1	6.9	0.85	0.46	2.78	0.66	3.49	0.2	34	69.2	329	1.42	1.1	33.6	0.7	0.6	0.2	90	< 0.05	0.86	4.8	0.49
E835354	0.014	8	0.8	0.08	0.27	0.33	0.06	4.00	0.1	5	16.8	298	0.33	0.1	6.6	< 0.1	< 0.1	< 0.1	40	< 0.05	0.16	1.2	0.06
E835355	0.010	14	< 0.5	0.03	0.31	0.20	0.05	4.76	0.1	3	10.2	51	0.15	0.1	5.6	< 0.1	< 0.1	< 0.1	60	< 0.05	0.15	1.1	0.05
E835356	0.014	8	0.5	0.03	0.30	0.30	0.05	4.81	0.3	13	10.2	57	0.17	0.2	12.1	0.3	0.1	< 0.1	60	< 0.05	0.13	1.0	0.16
E835357	0.010	< 1	3.7	0.50	0.25	1.54	0.41	2.94	0.2	16	15.2	263	0.70	0.4	7.4	0.3	0.4	0.1	40	< 0.05	0.46	1.5	0.23

## Results

## Activation Laboratories Ltd.

Report: A17-10896

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E835358	0.009	6	0.7	0.06	0.26	0.29	0.07	3.69	0.1	3	5.7	261	0.25	< 0.1	3.1	< 0.1	< 0.1	< 0.1	20	< 0.05	0.21	0.8	< 0.05
E835359	< 0.005	6	0.7	0.02	0.25	0.22	0.06	3.59	0.1	4	10.5	187	1.20	0.1	3.3	0.1	< 0.1	< 0.1	20	< 0.05	0.30	0.9	< 0.05
E835360	< 0.005	< 1	18.8	2.43	0.27	7.02	3.94	0.99	< 0.1	19	11.8	264	1.87	2.6	2.7	0.7	1.2	0.3	20	< 0.05	1.48	8.1	0.77
E835361	0.010	13	0.5	0.02	0.28	0.18	0.05	4.07	0.2	14	16.6	422	0.77	0.1	6.1	0.1	< 0.1	< 0.1	110	< 0.05	0.18	1.2	0.06
E835362	0.005	19	0.8	0.04	0.28	0.30	0.06	4.56	0.3	23	7.5	177	0.71	0.2	11.3	0.2	0.1	< 0.1	90	< 0.05	0.34	0.5	0.13
GXR-1 Meas		< 1	5.9	0.04	0.20	1.85	0.04	0.78	2.6	76	15.2	856	24.2	0.5	36.6		0.8		3070	29.9	2.65	7.1	0.58
GXR-1 Cert		15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		< 1	10.8	0.54	1.76	6.67	4.02	0.95	0.2	93	46.2	181	3.31	1.4	39.5		2.0		80	3.24	2.51	14.4	1.37
GXR-4 Cert		4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63
SDC-1 Meas		8	31.9	1.57	0.96	7.38	1.86	0.87		65	70.8	863	4.91	1.3	32.7	3.0	2.6	1.1	70		3.44	16.8	1.29
SDC-1 Cert		13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70
GXR-6 Meas		< 1	34.1	0.10	0.63	> 10.0	1.83	0.16	0.1	102	50.4	980	5.66	1.7	23.5		0.9		70	0.23	3.73	12.5	0.58
GXR-6 Cert		9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760
DNC-1a Meas			4.2							140	235				250							51.6	0.54
DNC-1a Cert			5.2							148	270				247							57	0.59
SBC-1 Meas										0.3	215	79.5		3.4	82.0	3.2	3.2	1.2			7.50	20.9	1.74
SBC-1 Cert										0.40	220.0	109		3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98
OREAS 45d (4-Acid) Meas			19.7	0.09	0.26	7.33	0.43	0.16		82	523	494	15.0	1.2	227	1.3	0.8	0.5			3.48	28.4	0.59
OREAS 45d (4-Acid) Cert			21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57
SdAR-M2 (U.S.G.S.) Meas			17.7							4.9	25	39.9		3.9	50.6	2.7	6.9	1.0	980		1.57	13.0	1.29
SdAR-M2 (U.S.G.S.) Cert			17.9							5.1	25.2	49.6		7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44
OREAS 223 (Fire Assay) Meas	1.81																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 223 (Fire Assay) Meas	1.78																						
OREAS 223 (Fire Assay) Cert	1.78																						
OREAS 218 Meas	0.515																						
OREAS 218 Cert	0.531																						
OREAS 218 Meas	0.548																						
OREAS 218 Cert	0.531																						
E832429 Orig	0.008																						
E832429 Dup	< 0.005																						
E832441 Orig		7	< 0.5	0.01	0.24	0.31	0.03	2.60	0.5	5	12.7	372	0.44	0.1	4.6	0.1	< 0.1	< 0.1	50	< 0.05	0.21	1.7	0.08
E832441 Dup		10	< 0.5	0.01	0.23	0.30	0.03	2.52	0.4	5	8.7	370	0.43	< 0.1	7.8	0.1	0.2	< 0.1	70	< 0.05	0.21	2.1	0.07
E832443 Orig		13	0.6	0.02	0.16	0.38	0.05	3.10	0.3	7	6.1	410	0.60	0.2	10.3	0.4	0.1	0.1	120	< 0.05	0.21	2.4	0.20
E832443 Dup		14	0.6	0.02	0.16	0.40	0.05	3.15	0.2	7	9.2	413	0.62	0.3	9.8	0.4	0.1	0.1	100	< 0.05	0.21	2.5	0.22

	FA-AA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Au	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu
DESCRIPTION	g/mt	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
E832447 Orig	0.011																						
E832447 Dup	0.012																						
E835147 Orig	0.014																						
E835147 Dup	0.014																						
E835357 Orig	0.010																						
E835357 Dup	0.006																						
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	3.9	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		6	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.0	8	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		6	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.9	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank		5	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.8	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						
Method Blank	< 0.005																						

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832422	0.08	0.8	12.7	< 0.1	0.2	2.2	3.4	9	0.7	3.43	< 0.1	< 1	0.3	< 0.1	92	8.6	11.5	1.7	6.9	0.5	0.8	< 0.1	0.5
E832423	0.13	0.8	17.2	< 0.1	6.9	4.6	7.7	12	1.3	1.87	< 0.1	< 1	0.1	< 0.1	148	39.6	71.5	7.2	27.7	2.4	2.5	0.3	1.6
E832424	0.08	0.2	18.5	< 0.1	1.3	1.7	1.7	7	0.5	1.88	< 0.1	< 1	< 0.1	< 0.1	60	5.5	10.1	1.1	4.2	0.6	0.5	< 0.1	0.3
E832425	0.10	1.3	10.0	0.4	< 0.1	3.4	9.1	10	0.9	0.93	< 0.1	< 1	0.1	< 0.1	94	44.1	69.9	8.5	34.5	3.6	3.5	0.4	1.9
E832426	0.11	1.0	31.1	< 0.1	0.8	3.4	5.9	16	1.0	2.21	< 0.1	< 1	0.2	< 0.1	232	14.2	28.0	3.2	13.1	1.4	1.5	0.2	1.1
E832427	0.08	0.6	7.3	< 0.1	0.4	2.3	6.6	14	0.6	1.38	< 0.1	< 1	0.1	< 0.1	139	10.8	13.4	2.5	11.1	1.6	1.4	0.2	1.1
E832428	0.08	0.7	24.3	< 0.1	< 0.1	2.0	12.9	17	0.6	5.52	< 0.1	< 1	0.3	< 0.1	224	35.5	34.8	7.3	30.9	3.6	3.5	0.4	2.1
E832429	0.05	0.7	11.4	< 0.1	1.1	2.7	2.0	9	0.8	0.56	< 0.1	< 1	0.3	< 0.1	108	3.8	6.0	0.9	3.6	0.5	0.5	< 0.1	0.4
E832430	1.19	< 0.1	46.0	14.8	5.2	382	11.6	47	0.2	1.76	< 0.1	< 1	0.1	< 0.1	51	3.6	8.5	1.2	6.7	1.8	2.3	0.4	2.2
E832431	0.06	0.6	9.6	< 0.1	1.2	1.9	2.4	5	0.6	0.54	< 0.1	< 1	0.9	< 0.1	88	3.9	5.5	0.9	3.6	0.6	0.4	< 0.1	0.4
E832432	0.05	0.5	11.5	< 0.1	1.5	1.6	1.1	5	0.5	0.43	< 0.1	< 1	0.4	< 0.1	66	1.8	3.0	0.4	1.6	0.3	0.3	< 0.1	0.2
E832433	0.06	0.5	15.1	< 0.1	10.9	2.2	3.0	6	0.5	0.69	< 0.1	< 1	< 0.1	< 0.1	82	10.7	19.2	2.1	8.1	1.3	0.8	< 0.1	0.5
E832434	0.07	1.0	21.7	< 0.1	437	2.8	5.0	14	0.8	3.43	< 0.1	< 1	0.1	< 0.1	325	6.0	12.1	1.6	7.0	1.1	1.2	0.1	0.8
E832435	0.07	0.6	14.8	< 0.1	14.1	2.0	1.4	5	0.5	0.86	< 0.1	< 1	0.6	< 0.1	94	1.9	3.5	0.5	2.0	0.3	0.3	< 0.1	0.2
E832436	0.06	0.6	8.2	< 0.1	2.5	1.5	2.9	8	0.4	1.56	< 0.1	< 1	0.2	< 0.1	137	6.7	7.1	1.5	6.1	0.9	0.8	< 0.1	0.5
E832437	0.10	0.4	13.3	< 0.1	15.0	1.3	2.6	7	0.3	1.42	< 0.1	< 1	0.2	< 0.1	99	6.1	7.8	1.3	5.5	1.0	0.7	< 0.1	0.4
E832441	0.06	0.5	19.7	< 0.1	10.8	1.2	1.8	4	0.4	0.80	< 0.1	< 1	< 0.1	< 0.1	59	2.8	3.7	0.6	2.5	0.5	0.4	< 0.1	0.3
E832442	0.05	0.6	12.3	< 0.1	7.8	1.4	1.6	5	0.4	2.70	< 0.1	< 1	0.2	0.1	53	3.6	5.0	0.7	3.0	0.4	0.4	< 0.1	0.3
E832443	0.05	0.8	5.3	< 0.1	5.6	1.9	4.1	11	0.6	0.89	< 0.1	< 1	0.2	< 0.1	81	9.6	15.1	2.0	8.4	0.8	1.0	0.1	0.7
E832444	0.04	0.8	20.9	< 0.1	3.6	2.1	1.5	8	0.5	2.71	< 0.1	< 1	0.4	< 0.1	82	2.6	4.9	0.6	2.3	0.5	0.4	< 0.1	0.3
E832445	0.03	0.5	13.5	< 0.1	5.4	1.0	0.8	3	0.3	0.56	< 0.1	< 1	0.3	< 0.1	64	1.1	1.9	0.3	1.1	0.2	0.2	< 0.1	0.1
E832446	0.03	0.3	6.1	< 0.1	< 0.1	1.0	0.5	2	0.2	0.38	< 0.1	< 1	0.1	< 0.1	58	0.8	1.2	0.2	0.8	< 0.1	0.1	< 0.1	0.1
E832447	0.03	0.4	5.7	< 0.1	1.0	0.7	0.5	3	0.1	0.64	< 0.1	< 1	0.2	< 0.1	56	0.5	0.8	0.1	0.5	0.1	< 0.1	< 0.1	< 0.1
E832448	0.04	0.8	6.1	< 0.1	1.4	1.3	1.3	5	0.3	1.41	< 0.1	< 1	0.5	< 0.1	84	2.5	3.2	0.5	2.3	0.3	0.3	< 0.1	0.2
E832449	0.04	0.2	3.2	< 0.1	0.9	0.9	0.9	4	0.2	1.25	< 0.1	< 1	0.3	< 0.1	55	1.3	2.2	0.3	1.3	0.2	0.2	< 0.1	0.2

## Results

## Activation Laboratories Ltd.

## Report: A17-10896

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832450	0.79	< 0.1	44.4	15.1	6.6	442	10.5	57	1.9	3.86	< 0.1	1	1.4	< 0.1	54	3.2	7.9	1.1	5.8	1.3	2.1	0.3	2.3
E835141	0.06	0.9	18.1	0.3	12.6	7.3	4.4	22	1.4	1.88	< 0.1	< 1	0.4	< 0.1	119	9.8	13.2	2.0	8.5	1.2	1.1	0.1	0.8
E835142	0.05	0.5	12.3	< 0.1	2.5	2.0	2.7	9	0.5	0.42	< 0.1	< 1	0.1	< 0.1	119	8.3	9.8	1.7	6.5	1.0	0.7	< 0.1	0.5
E835143	0.07	0.8	9.0	< 0.1	8.5	2.4	4.3	6	0.5	0.69	< 0.1	< 1	1.6	< 0.1	157	15.6	22.3	2.8	11.1	1.4	1.1	0.1	0.8
E835144	0.05	0.7	8.7	< 0.1	4.7	1.5	4.0	7	0.4	0.66	< 0.1	< 1	0.9	< 0.1	135	10.9	17.3	2.1	8.5	1.0	1.0	0.1	0.7
E835145	0.08	1.0	11.1	0.3	9.4	6.0	8.8	10	1.0	0.42	< 0.1	< 1	0.6	< 0.1	124	26.4	42.0	5.3	21.1	2.5	2.3	0.3	1.5
E835146	0.10	0.2	6.9	< 0.1	7.0	1.8	8.6	14	0.6	1.52	< 0.1	< 1	0.2	< 0.1	88	38.3	80.9	7.5	31.3	3.7	3.3	0.4	1.8
E835147	0.05	0.3	8.0	< 0.1	2.2	1.2	3.3	5	0.3	1.01	< 0.1	< 1	0.8	< 0.1	91	9.8	16.8	1.8	7.2	0.9	0.9	0.1	0.6
E835148	0.09	3.7	12.5	1.2	34.2	13.0	17.2	31	2.0	0.47	< 0.1	< 1	1.1	< 0.1	185	53.1	53.3	11.1	45.3	5.1	4.6	0.6	3.2
E835149	0.05	1.4	8.3	< 0.1	5.4	2.2	5.3	10	0.6	0.88	< 0.1	< 1	0.6	< 0.1	78	17.6	26.5	3.4	13.7	1.5	1.3	0.2	1.0
E835150	0.75	< 0.1	41.2	14.0	6.3	397	10.7	61	2.2	4.10	< 0.1	< 1	1.9	< 0.1	50	3.4	8.2	1.1	6.4	1.5	2.2	0.4	2.1
E835351	0.08	1.1	32.9	< 0.1	3.8	2.5	2.1	10	0.7	0.70	< 0.1	< 1	0.3	0.2	87	5.5	8.9	1.1	4.6	0.5	0.5	< 0.1	0.4
E835352	0.10	< 0.1	35.0	4.7	2.9	44.1	8.6	126	5.7	0.41	< 0.1	< 1	0.2	< 0.1	438	19.6	37.0	4.2	17.4	2.5	2.2	0.3	1.7
E835353	0.10	0.7	16.9	4.0	9.2	20.9	6.5	42	2.5	2.74	< 0.1	< 1	0.5	< 0.1	218	17.3	21.9	3.5	13.8	2.0	1.7	0.2	1.2
E835354	0.04	0.6	6.9	< 0.1	< 0.1	2.3	1.0	5	0.5	1.18	< 0.1	< 1	0.3	< 0.1	94	1.4	2.3	0.3	1.4	0.2	0.2	< 0.1	0.1
E835355	0.04	0.6	3.3	< 0.1	< 0.1	1.8	0.8	4	0.4	1.02	< 0.1	< 1	0.2	< 0.1	73	1.6	2.6	0.4	1.5	0.2	0.2	< 0.1	0.2
E835356	0.04	2.4	4.1	< 0.1	1.7	1.9	2.7	6	0.4	0.77	< 0.1	< 1	1.2	< 0.1	81	5.3	5.3	1.2	4.9	0.6	0.6	< 0.1	0.5
E835357	0.08	0.2	13.8	1.4	1.3	12.3	2.9	19	1.6	0.92	< 0.1	< 1	0.2	< 0.1	163	7.9	15.8	1.7	6.9	0.8	0.8	0.1	0.6
E835358	0.04	0.3	3.9	< 0.1	0.6	2.3	0.8	3	0.5	0.65	< 0.1	< 1	0.3	< 0.1	70	1.5	2.8	0.3	1.4	0.2	0.2	< 0.1	0.2
E835359	0.04	0.7	16.6	< 0.1	5.7	2.0	0.8	4	0.5	0.78	< 0.1	< 1	0.2	< 0.1	95	1.7	3.0	0.3	1.5	0.2	0.2	< 0.1	0.1
E835360	0.04	< 0.1	49.1	6.3	< 0.1	114	7.9	138	3.7	0.55	< 0.1	1	< 0.1	< 0.1	971	76.5	145	15.8	59.6	5.8	4.7	0.4	1.9
E835361	0.04	1.1	8.2	< 0.1	13.3	1.6	1.2	6	0.4	2.07	< 0.1	< 1	0.5	< 0.1	87	2.7	4.4	0.6	2.5	0.2	0.3	< 0.1	0.2
E835362	0.05	1.3	5.9	< 0.1	8.2	2.2	2.0	7	0.7	1.67	< 0.1	< 1	1.4	< 0.1	91	7.8	12.2	1.5	5.4	0.6	0.5	< 0.1	0.3
GXR-1 Meas	1240	15.1	739	2.9	433	2.4	26.2	22	0.9	16.5	0.8	29	27.3	7.8	704	7.3	14.6		9.2	2.4	3.6	0.7	4.5
GXR-1 Cert	1380	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	19.1	5.7	66.8	9.6	104	122	12.5	47	10.4	305	0.2	7	4.7	0.8	852	57.9	109		46.7	5.8	4.4	0.5	2.7
GXR-4 Cert	19.0	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60
SDC-1 Meas			101	17.3	< 0.1	82.5		46	3.9			1	0.2		577	34.2	79.9		39.1	6.4	5.6	0.9	5.5
SDC-1 Cert			103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70
GXR-6 Meas	0.21	0.2	122	16.9	202	63.0	10.9	56	0.3	0.32	< 0.1	< 1	0.5	< 0.1	1390	11.2	30.8		12.8	2.1	2.0	0.3	2.1
GXR-6 Cert	0.290	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80
DNC-1a Meas			60.5	13.5		2.9	14.2	38	1.4				0.5		99	3.4			5.1				
DNC-1a Cert			70	15		5	18.0	38.0	3				0.96		118	3.6			5.20				
SBC-1 Meas	0.70		188	19.1	21.7	124	29.0	124	13.7	2.50		4	1.0		798	47.6	103	12.1	52.7	8.2	7.4	1.1	6.2
SBC-1 Cert	0.70		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10
OREAS 45d (4-Acid) Meas	0.51		42.9	22.1	4.1	36.4	10.4	46	0.9	0.29	< 0.1	< 1	< 0.1		179	16.0	35.7	3.8	15.3	2.5	2.2	0.4	2.2
OREAS 45d (4-Acid) Cert	0.31		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26
SdAR-M2 (U.S.G.S.) Meas	1.02		812	8.8		107	23.5	125	18.6	10.9					1000	43.1	94.3	10.2	42.1	5.9	5.1	0.8	4.6
SdAR-M2	1.05		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Bi	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(U.S.G.S.) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832429 Orig																							
E832429 Dup																							
E832441 Orig	0.06	0.5	19.7	< 0.1	10.8	1.2	1.8	4	0.4	0.80	< 0.1	< 1	< 0.1	< 0.1	59	2.8	3.7	0.6	2.5	0.5	0.4	< 0.1	0.3
E832441 Dup	0.10	0.5	19.0	< 0.1	9.3	1.1	1.7	4	0.4	0.92	< 0.1	2	0.2	< 0.1	55	2.8	3.6	0.6	2.6	0.5	0.3	< 0.1	0.3
E832443 Orig	0.05	0.8	5.3	< 0.1	5.6	1.9	4.1	11	0.6	0.89	< 0.1	< 1	0.2	< 0.1	81	9.6	15.1	2.0	8.4	0.8	1.0	0.1	0.7
E832443 Dup	0.06	1.0	6.2	< 0.1	5.2	1.9	4.1	12	0.7	0.94	< 0.1	< 1	0.2	< 0.1	80	9.6	15.0	2.0	8.4	1.1	1.0	0.1	0.7
E832447 Orig																							
E832447 Dup																							
E835147 Orig																							
E835147 Dup																							
E835357 Orig																							
E835357 Dup																							
Method Blank	0.02	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.02	< 0.1	< 0.2	< 0.1	< 0.1	0.3	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank	0.03	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.22	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832422	21.9	< 0.1	< 0.1	0.3	< 0.1	< 0.1	32.6	0.2	0.001	0.08	1.3	1.8	1.6
E832423	15.9	< 0.1	< 0.1	0.7	< 0.1	< 0.1	46.5	0.5	0.002	0.14	4.4	5.9	4.2
E832424	7.8	< 0.1	< 0.1	0.2	< 0.1	< 0.1	29.6	0.1	0.002	0.06	1.0	1.2	0.8
E832425	52.7	< 0.1	0.1	0.8	0.1	< 0.1	33.0	0.6	0.004	0.18	1.8	5.5	13.6
E832426	23.2	< 0.1	< 0.1	0.6	< 0.1	< 0.1	35.4	0.2	0.003	0.17	2.3	3.9	2.2
E832427	24.6	< 0.1	< 0.1	0.6	< 0.1	< 0.1	30.1	0.2	0.002	0.12	0.9	3.5	1.1



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832428	69.8	< 0.1	0.1	1.0	0.1	< 0.1	36.4	0.2	0.003	0.49	1.3	5.9	2.8
E832429	12.6	< 0.1	< 0.1	0.2	< 0.1	< 0.1	48.3	0.2	0.001	0.08	2.2	1.3	0.5
E832430	29.4	< 0.1	0.2	1.2	0.2	< 0.1	82.2	< 0.1	< 0.001	5.41	8.2	0.7	0.2
E832431	25.4	< 0.1	< 0.1	0.2	< 0.1	< 0.1	49.2	0.1	0.001	0.07	1.6	1.4	0.4
E832432	10.9	< 0.1	< 0.1	0.1	< 0.1	< 0.1	43.1	0.1	0.001	< 0.05	1.3	0.8	0.3
E832433	8.6	< 0.1	< 0.1	0.3	< 0.1	< 0.1	40.6	0.1	0.002	0.06	1.0	1.3	0.8
E832434	10.4	< 0.1	< 0.1	0.5	< 0.1	< 0.1	49.0	0.2	0.002	0.06	1.8	2.6	0.8
E832435	8.5	< 0.1	< 0.1	0.2	< 0.1	< 0.1	52.2	0.1	0.003	0.07	1.9	1.0	0.3
E832436	14.5	< 0.1	< 0.1	0.3	< 0.1	< 0.1	36.1	0.1	0.003	0.11	0.9	1.7	0.5
E832437	31.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	25.0	0.1	0.003	0.11	2.7	1.8	0.7
E832441	9.8	< 0.1	< 0.1	0.2	< 0.1	< 0.1	39.8	< 0.1	0.002	< 0.05	0.8	0.7	0.3
E832442	20.5	< 0.1	< 0.1	0.2	< 0.1	< 0.1	37.8	0.1	0.007	0.06	1.0	0.8	0.8
E832443	22.0	< 0.1	< 0.1	0.4	< 0.1	< 0.1	36.1	0.1	0.001	0.08	1.6	2.2	0.9
E832444	9.2	< 0.1	< 0.1	0.2	< 0.1	< 0.1	44.4	0.2	0.002	< 0.05	0.8	1.0	1.0
E832445	9.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	31.6	< 0.1	0.002	< 0.05	< 0.5	0.4	0.2
E832446	4.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	34.0	< 0.1	0.001	< 0.05	< 0.5	0.3	0.1
E832447	7.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	31.9	< 0.1	0.002	< 0.05	1.1	0.3	0.1
E832448	22.3	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.4	0.1	0.004	0.11	1.1	0.8	0.3
E832449	12.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	31.7	0.8	0.001	0.06	< 0.5	0.7	0.2
E832450	33.7	0.3	0.2	1.2	0.1	0.1	83.2	0.3	< 0.001	5.75	8.7	0.6	0.3
E835141	45.3	< 0.1	< 0.1	0.4	< 0.1	0.1	59.2	0.3	0.003	0.17	2.6	2.6	1.5
E835142	14.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	33.2	0.1	0.002	0.07	1.0	1.5	0.5
E835143	54.8	< 0.1	< 0.1	0.4	< 0.1	< 0.1	36.1	0.3	0.002	0.16	3.1	1.4	1.8
E835144	70.0	< 0.1	< 0.1	0.4	< 0.1	< 0.1	29.6	0.3	0.002	0.09	2.0	1.3	0.8
E835145	67.7	< 0.1	0.1	0.8	0.1	< 0.1	46.0	0.3	0.001	0.17	3.0	4.4	2.8
E835146	32.5	< 0.1	< 0.1	0.6	< 0.1	< 0.1	26.0	0.4	0.002	0.10	1.3	3.6	1.3
E835147	56.0	< 0.1	< 0.1	0.3	< 0.1	< 0.1	30.5	0.6	0.001	0.12	1.5	1.4	0.8
E835148	179	< 0.1	0.2	1.6	0.2	< 0.1	75.2	0.2	0.009	0.25	4.6	14.1	12.6
E835149	57.5	< 0.1	< 0.1	0.5	< 0.1	< 0.1	35.7	0.1	0.006	0.24	1.2	4.5	2.0
E835150	28.9	0.2	0.2	1.1	0.2	0.2	78.3	0.4	< 0.001	5.31	8.1	0.6	0.2
E835351	29.9	< 0.1	< 0.1	0.2	< 0.1	< 0.1	33.7	1.8	0.003	0.11	1.3	1.8	0.7
E835352	12.6	< 0.1	0.1	1.0	0.1	0.3	199	0.4	0.001	0.33	10.9	6.1	1.3
E835353	58.1	< 0.1	< 0.1	0.7	< 0.1	0.2	107	0.6	0.004	0.29	5.7	3.9	2.1
E835354	5.9	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.1	0.2	0.002	0.05	1.0	0.5	0.2
E835355	4.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	41.2	0.1	0.002	< 0.05	0.6	0.6	0.2
E835356	50.6	< 0.1	< 0.1	0.3	< 0.1	< 0.1	40.2	0.1	0.005	0.10	0.8	1.8	6.9
E835357	7.0	< 0.1	< 0.1	0.3	< 0.1	< 0.1	82.2	0.2	0.002	0.14	5.5	3.2	1.0
E835358	3.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35.8	< 0.1	0.001	< 0.05	1.3	0.5	0.2
E835359	2.9	< 0.1	< 0.1	0.1	< 0.1	< 0.1	30.5	0.1	0.002	< 0.05	0.7	0.5	0.4
E835360	13.9	< 0.1	< 0.1	0.7	< 0.1	0.2	229	10.2	< 0.001	1.00	37.2	53.0	2.7
E835361	9.8	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.4	0.2	0.007	0.10	1.2	0.9	4.4
E835362	21.5	< 0.1	< 0.1	0.2	< 0.1	< 0.1	41.6	0.2	0.005	0.18	1.4	1.6	9.7
GXR-1 Meas	1110		0.3	2.2	0.3	< 0.1	280	147		0.40	654	2.6	30.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-1 Cert	1110		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas												> 500	1950
DH-1a Cert												910	2629
GXR-4 Meas	5890		0.2	1.1	0.1	0.6	213	36.0		3.20	51.0	22.6	5.6
GXR-4 Cert	6520		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas	27.8		0.5	3.1		0.2	157	0.3		0.61	24.7	11.0	2.4
SDC-1 Cert	30.000		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas	65.7			1.6	0.2	< 0.1	35.3	0.2		2.12	96.7	4.9	1.3
GXR-6 Cert	66.0			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas	94.2			1.9			133				5.7		
DNC-1a Cert	100			2.0			144				6.3		
SBC-1 Meas	28.1		0.5	3.4	0.4	0.8	165	1.7		0.89	35.1	16.1	5.5
SBC-1 Cert	31.0000		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas	376			1.5	0.2	< 0.1	28.9	0.2		0.26	20.9	15.2	2.7
OREAS 45d (4-Acid) Cert	371			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas	259		0.4	2.9	0.4	1.1	135	2.6			684	14.6	2.4
SdAR-M2 (U.S.G.S.) Cert	236.00 00		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 223 (Fire Assay) Meas													
OREAS 223 (Fire Assay) Cert													
OREAS 218 Meas													
OREAS 218 Cert													
OREAS 218 Meas													
OREAS 218 Cert													
E832429 Orig													
E832429 Dup													
E832441 Orig	9.8	< 0.1	< 0.1	0.2	< 0.1	< 0.1	39.8	< 0.1	0.002	< 0.05	0.8	0.7	0.3
E832441 Dup	10.8	< 0.1	< 0.1	0.2	< 0.1	< 0.1	37.3	0.1	0.002	< 0.05	0.9	0.7	0.3
E832443 Orig	22.0	< 0.1	< 0.1	0.4	< 0.1	< 0.1	36.1	0.1	0.001	0.08	1.6	2.2	0.9
E832443 Dup	21.7	< 0.1	< 0.1	0.4	< 0.1	< 0.1	36.8	0.1	< 0.001	0.08	1.7	2.2	0.9
E832447 Orig													
E832447 Dup													
E835147 Orig													
E835147 Dup													
E835357 Orig													

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Cu	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E835357 Dup													
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	0.3	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank													
Method Blank													
Method Blank													
Method Blank													



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12624-Au  
**Invoice Date:** 22-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

116 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-12624-Au**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font with a horizontal line underneath it.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E837417	0.010
E837418	< 0.005
E837419	< 0.005
E837420	< 0.005
E837421	< 0.005
E837422	< 0.005
E837423	< 0.005
E837424	< 0.005
E837425	< 0.005
E837426	< 0.005
E837427	0.038
E837428	< 0.005
E837429	< 0.005
E837430	3.38
E837431	< 0.005
E837432	< 0.005
E837433	< 0.005
E837434	< 0.005
E837435	< 0.005
E837436	< 0.005
E837437	< 0.005
E837438	< 0.005
E837439	< 0.005
E837440	< 0.005
E837441	< 0.005
E837442	0.015
E837443	< 0.005
E837444	< 0.005
E837445	< 0.005
E837446	< 0.005
E837447	< 0.005
E837448	< 0.005
E837449	< 0.005
E837450	3.20
E837351	< 0.005
E837352	< 0.005
E837353	0.008
E837354	< 0.005
E837355	< 0.005
E837356	< 0.005
E837357	0.018
E837358	< 0.005
E837359	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E837360	< 0.005
E837361	< 0.005
E837362	< 0.005
E837363	< 0.005
E837364	< 0.005
E837365	< 0.005
E837366	< 0.005
E821060	< 0.005
E821061	< 0.005
E821062	< 0.005
E821063	< 0.005
E821064	< 0.005
E821065	< 0.005
E821066	0.006
E821067	< 0.005
E821068	< 0.005
E821069	< 0.005
E821070	3.27
E821071	< 0.005
E821072	< 0.005
E821073	< 0.005
E821074	< 0.005
E821075	< 0.005
E837367	< 0.005
E837368	< 0.005
E837369	< 0.005
E837370	3.26
E837371	< 0.005
E837372	< 0.005
E837373	< 0.005
E837374	< 0.005
E837375	< 0.005
E837376	< 0.005
E837377	< 0.005
E837378	< 0.005
E837379	< 0.005
E837380	< 0.005
E837381	< 0.005
E837382	< 0.005
E837383	< 0.005
E837384	< 0.005
E837385	< 0.005
E837386	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E837387	< 0.005
E837388	0.032
E837389	< 0.005
E837390	3.23
E837391	< 0.005
E837392	< 0.005
E837393	< 0.005
E837394	< 0.005
E837395	< 0.005
E837396	< 0.005
E837397	< 0.005
E837398	< 0.005
E837399	< 0.005
E837400	< 0.005
E837459	< 0.005
E821101	< 0.005
E821102	< 0.005
E821103	< 0.005
E821104	< 0.005
E821105	< 0.005
E821106	< 0.005
E821107	< 0.005
E821108	< 0.005
E821109	< 0.005
E821110	3.27
E821111	< 0.005
E821112	< 0.005
E821113	< 0.005
E821114	< 0.005
E821115	< 0.005
OREAS 220 (Fire Assay) Meas	0.870
OREAS 220 (Fire Assay) Cert	0.828
OREAS 220 (Fire Assay) Meas	0.839
OREAS 220 (Fire Assay) Cert	0.828
OREAS 220 (Fire Assay) Meas	0.864
OREAS 220 (Fire Assay) Cert	0.828
OREAS 220 (Fire Assay) Meas	0.874
OREAS 220 (Fire Assay) Meas	0.828

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
Assay) Cert	
OREAS 224 (Fire Assay) Meas	2.15
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.09
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.10
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.05
OREAS 224 (Fire Assay) Cert	2.15
E837429 Orig	< 0.005
E837429 Dup	< 0.005
E837440 Orig	< 0.005
E837440 Dup	< 0.005
E837351 Orig	< 0.005
E837351 Dup	< 0.005
E821061 Orig	< 0.005
E821061 Dup	0.005
E821065 Orig	< 0.005
E821065 Dup	< 0.005
E837369 Orig	< 0.005
E837369 Dup	< 0.005
E837383 Orig	< 0.005
E837383 Dup	< 0.005
E837394 Orig	< 0.005
E837394 Dup	< 0.005
E821103 Orig	< 0.005
E821103 Dup	< 0.005
E821114 Orig	< 0.005
E821114 Dup	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005





**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12624-UT4  
**Invoice Date:** 28-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

116 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-12624-UT4**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613  
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Date Submitted: 08-Nov-17  
Invoice No.: A17-12624-UT4  
Invoice Date: 28-Dec-17  
Your Reference: Exploration

GOLDCORP Canada Ltd--Musselwhite Mine  
P.O. Box 7500  
Thunder bay Ontario P7B 6S8  
Canada

ATTN: Katie Lucas

## CERTIFICATE OF ANALYSIS

116 Soil samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-4 Total Digestion ICP/MS

REPORT **A17-12624-UT4**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



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Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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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

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E837417	< 1	18.6	2.16	0.89	6.96	1.69	1.85	< 0.1	34	109	375	3.92	3.3	33.1	0.8	1.1	0.3	60	< 0.05	2.52	9.1	0.51	0.23
E837418	< 1	12.5	2.31	0.72	6.69	1.78	1.84	< 0.1	38	56.2	340	1.92	3.6	23.0	0.8	1.0	0.3	50	< 0.05	0.83	7.0	0.53	0.09
E837419	< 1	39.2	1.81	1.49	7.90	2.28	1.79	0.1	67	87.9	880	4.04	3.7	57.4	1.7	1.8	0.5	80	< 0.05	4.38	19.0	0.89	0.21
E837420	< 1	20.2	2.53	0.38	7.23	3.04	1.18	< 0.1	24	24.7	401	3.20	1.2	3.6	0.9	1.2	0.3	50	< 0.05	1.42	5.5	0.67	0.03
E837421	< 1	34.0	2.05	1.28	7.31	2.13	1.65	< 0.1	56	80.7	591	3.29	3.6	47.2	1.1	1.5	0.4	70	< 0.05	3.12	14.4	0.66	0.16
E837422	10	19.2	2.27	1.11	7.04	2.06	2.35	< 0.1	52	87.9	427	2.89	4.2	29.6	1.3	1.4	0.4	60	< 0.05	1.77	11.6	0.76	0.13
E837423	6	33.0	2.82	1.48	9.69	1.52	2.35	0.1	100	95.9	504	4.54	2.6	56.9	1.0	1.5	0.3	100	< 0.05	2.59	14.0	0.52	0.24
E837424	14	49.6	2.01	1.42	8.58	1.76	1.49	< 0.1	66	114	389	4.51	4.0	86.5	1.0	1.7	0.3	80	< 0.05	2.53	19.8	0.81	0.17
E837425	2	28.3	2.06	0.78	6.45	1.56	1.66	< 0.1	57	145	362	3.34	3.9	54.7	0.7	1.4	0.2	70	< 0.05	1.70	14.5	0.35	0.18
E837426	6	26.9	2.09	1.04	8.13	1.64	1.97	< 0.1	63	135	411	3.67	4.3	62.2	0.9	1.4	0.3	70	< 0.05	1.85	15.6	0.52	0.19
E837427	< 1	41.3	2.01	0.99	9.06	1.41	1.94	0.1	73	106	556	5.79	6.1	44.1	1.3	1.5	0.4	90	< 0.05	2.09	14.3	0.61	0.27
E837428	< 1	77.4	1.96	1.56	7.76	1.10	3.02	0.1	56	88.1	800	5.25	3.4	71.0	1.9	1.1	0.6	60	< 0.05	2.63	22.6	1.08	0.20
E837429	< 1	35.7	2.06	1.48	7.67	1.27	2.41	< 0.1	50	144	564	4.31	4.7	48.6	1.1	1.1	0.4	40	< 0.05	1.81	16.1	0.54	0.22
E837430	< 1	6.1	1.43	1.47	6.09	2.60	3.03	< 0.1	32	72.9	605	3.91	0.9	27.5	1.6	1.0	0.5	40	1.06	17.8	18.0	0.62	0.78
E837431	< 1	31.4	2.10	2.19	8.68	1.46	3.21	0.1	94	171	1040	6.63	3.4	62.2	1.4	1.1	0.4	70	< 0.05	2.72	27.5	0.53	0.40
E837432	< 1	15.5	2.37	0.94	8.02	1.64	2.07	< 0.1	50	81.7	346	2.51	3.8	39.5	1.0	1.5	0.3	50	< 0.05	0.96	10.8	0.58	0.13
E837433	< 1	31.0	2.70	1.17	9.94	1.52	2.23	0.1	62	103	435	4.36	2.4	40.0	1.0	1.5	0.3	110	< 0.05	2.50	12.1	0.56	0.48
E837434	< 1	34.1	2.16	1.58	8.73	1.34	2.73	< 0.1	73	112	668	4.89	3.4	48.9	1.4	1.4	0.4	80	< 0.05	1.86	16.3	0.77	0.17
E837435	< 1	74.5	2.22	1.67	8.75	1.48	2.34	< 0.1	81	130	643	5.98	3.6	59.2	1.1	1.4	0.4	60	< 0.05	3.56	21.3	0.58	0.35
E837436	3	40.5	1.96	1.34	6.45	1.11	2.70	0.1	127	141	589	5.65	3.0	38.2	1.0	1.1	0.3	110	0.24	2.59	14.9	0.44	0.54
E837437	6	38.1	2.64	1.01	9.78	1.44	1.98	0.1	85	94.5	411	4.42	2.6	33.2	0.9	1.4	0.3	100	< 0.05	2.63	10.8	0.50	0.31
E837438	< 1	33.0	2.21	1.03	8.27	1.76	1.82	< 0.1	56	106	475	3.39	4.4	36.2	0.9	1.4	0.3	70	< 0.05	1.82	12.5	0.50	0.17
E837439	< 1	35.0	2.90	1.52	9.13	1.86	2.45	0.2	67	108	578	4.67	3.0	48.7	1.0	1.3	0.3	50	< 0.05	3.62	15.5	0.46	0.48
E837440	< 1	25.0	2.84	0.30	6.49	4.08	1.02	< 0.1	16	21.1	357	2.84	3.7	3.2	0.4	1.1	0.2	50	< 0.05	2.07	3.8	0.45	0.04
E837441	< 1	12.1	2.44	0.91	6.44	1.45	2.37	< 0.1	21	98.3	484	2.72	4.7	23.4	1.1	1.1	0.4	40	< 0.05	0.63	8.2	0.69	0.11
E837442	< 1	51.8	2.20	1.24	7.33	1.37	2.41	0.1	31	99.7	566	4.23	2.8	43.4	1.2	1.1	0.4	40	< 0.05	2.76	18.4	0.62	0.29
E837443	< 1	56.5	2.30	1.67	7.95	1.48	2.64	< 0.1	37	113	678	5.21	2.6	64.7	1.3	1.3	0.4	50	< 0.05	2.52	21.5	0.66	0.25
E837444	< 1	76.2	2.50	1.82	6.48	1.41	2.05	0.1	35	264	447	7.89	1.9	107	1.1	2.9	0.4	50	< 0.05	2.36	19.1	1.59	0.28
E837445	< 1	25.4	2.82	1.00	8.84	1.36	2.50	< 0.1	37	58.6	447	3.85	2.5	29.4	0.8	1.3	0.3	50	< 0.05	2.84	10.9	0.53	0.25
E837446	3	57.0	2.27	1.45	7.18	1.39	2.32	0.1	116	167	624	6.30	2.8	76.5	0.9	1.6	0.3	60	< 0.05	2.56	22.9	0.40	0.28
E837447	< 1	24.3	2.23	1.22	7.34	1.32	2.27	< 0.1	66	103	428	3.48	2.4	44.3	0.8	1.2	0.3	70	< 0.05	1.39	13.2	0.47	0.16
E837448	< 1	31.9	2.50	1.41	8.13	1.52	2.37	0.1	64	113	493	5.00	3.0	47.2	0.9	1.2	0.3	60	< 0.05	3.13	14.1	0.44	0.31
E837449	< 1	24.0	2.03	1.08	6.76	1.59	1.90	< 0.1	79	97.6	414	4.95	2.7	39.5	0.8	1.3	0.3	60	< 0.05	1.73	11.4	0.45	0.20
E837450	< 1	6.0	1.43	1.38	5.35	2.49	2.88	< 0.1	43	64.1	559	3.89	0.7	27.6	1.4	1.1	0.5	50	1.08	17.3	17.5	0.61	0.65
E837351	< 1	26.0	2.45	1.53	8.61	1.34	2.48	0.1	37	119	486	4.77	2.0	46.3	0.9	1.2	0.3	70	< 0.05	2.76	14.1	0.48	0.20
E837352	< 1	34.0	2.83	1.26	9.05	1.63	2.44	< 0.1	43	84.0	480	4.67	2.5	41.0	0.8	1.5	0.3	50	< 0.05	3.11	12.7	0.45	0.24
E837353	< 1	40.6	2.62	1.04	9.08	1.67	1.89	0.1	33	83.6	416	4.17	2.5	49.0	0.8	1.6	0.3	80	< 0.05	2.72	14.2	0.49	0.28
E837354	< 1	26.6	2.22	0.94	7.45	1.48	1.87	< 0.1	26	81.2	371	3.34	2.7	41.0	0.9	1.3	0.3	60	< 0.05	1.55	12.9	0.56	0.18
E837355	< 1	26.1	2.38	0.94	7.93	1.56	1.99	< 0.1	31	78.2	384	3.24	2.7	40.4	0.9	1.3	0.3	40	< 0.05	1.48	13.3	0.54	0.16
E837356	< 1	49.6	2.16	1.15	7.08	1.97	2.03	< 0.1	53	109	510	3.92	3.4	47.0	1.1	1.2	0.4	50	< 0.05	2.39	15.5	0.57	0.26
E837357	< 1	31.0	2.05	0.99	7.98	0.87	1.91	< 0.1	85	113	421	5.61	1.9	38.3	0.9	1.3	0.3	90	< 0.05	2.14	10.9	0.48	0.22
E837358	< 1	9.7	2.40	0.49	6.92	1.61	1.66	< 0.1	43	43.8	270	2.12	0.3	16.3	0.9	1.5	0.3	50	< 0.05	0.79	6.6	0.59	0.09
E837359	< 1	9.9	2.50	0.53	6.67	1.63	1.70	< 0.1	41	44.7	283	2.08	0.7	17.5	0.9	1.3	0.3	50	< 0.05	0.71	7.4	0.63	0.08

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E837360	< 1	21.0	2.39	0.43	7.88	3.90	1.32	< 0.1	39	42.2	366	2.71	0.2	11.7	1.4	0.9	0.6	50	< 0.05	1.51	6.2	0.88	0.05
E837361	< 1	13.6	2.32	0.69	6.97	1.69	1.72	< 0.1	47	62.2	318	2.41	4.3	23.3	1.1	1.3	0.3	60	< 0.05	0.97	7.6	0.65	0.10
E837362	< 1	19.1	2.11	0.64	7.29	1.60	1.47	< 0.1	38	57.1	306	2.64	3.4	26.8	0.9	1.3	0.3	70	< 0.05	1.42	9.5	0.55	0.10
E837363	< 1	40.4	1.65	1.25	8.05	2.51	1.34	< 0.1	24	60.9	789	3.98	2.6	47.0	3.3	2.1	1.2	60	< 0.05	3.56	15.7	1.90	0.23
E837364	7	16.2	2.27	0.87	5.85	1.51	2.20	< 0.1	63	139	550	3.26	8.2	30.3	1.4	1.3	0.5	60	< 0.05	0.96	11.2	0.74	0.13
E837365	2	10.2	2.43	0.53	6.90	1.56	1.67	< 0.1	48	55.1	317	2.29	0.4	17.8	0.9	1.2	0.3	40	< 0.05	0.66	7.2	0.58	0.09
E837366	< 1	31.2	2.10	0.87	7.42	1.88	1.50	< 0.1	51	78.1	352	3.51	4.0	34.0	1.1	1.5	0.3	90	< 0.05	1.95	11.7	0.61	0.16
E821060	< 1	22.2	2.49	0.44	7.33	3.39	1.30	< 0.1	36	51.0	388	2.70	0.2	10.1	2.2	1.1	0.8	50	< 0.05	1.63	6.0	1.04	0.05
E821061	< 1	23.1	2.53	0.89	8.64	1.46	2.05	< 0.1	80	91.0	503	4.88	1.0	33.1	1.2	1.4	0.4	70	< 0.05	1.38	11.4	0.66	0.13
E821062	< 1	16.9	2.46	0.98	6.47	1.41	2.32	< 0.1	51	66.8	597	2.74	3.3	25.2	1.2	1.2	0.4	40	< 0.05	0.97	10.3	0.76	0.11
E821063	< 1	35.1	1.82	0.75	6.80	1.97	1.30	< 0.1	23	64.8	332	3.84	2.8	27.8	0.9	1.3	0.3	60	< 0.05	2.34	10.5	0.52	0.18
E821064	< 1	63.7	1.29	0.97	7.68	1.55	1.13	< 0.1	115	99.8	388	6.93	4.1	66.3	1.2	1.6	0.4	10	< 0.05	5.42	22.0	0.60	0.73
E821065	< 1	37.8	2.59	0.97	7.23	1.71	1.82	< 0.1	70	78.5	454	3.89	6.2	27.8	1.0	1.2	0.3	10	< 0.05	2.70	12.1	0.56	0.15
E821066	< 1	63.4	2.23	1.08	7.04	1.26	2.06	< 0.1	34	69.7	483	3.94	3.2	33.2	1.0	1.3	0.4	20	< 0.05	4.90	12.0	0.53	0.46
E821067	15	103	1.80	0.98	6.59	1.66	1.39	< 0.1	71	95.1	407	3.43	4.4	38.8	1.1	1.5	0.3	60	< 0.05	8.36	14.3	0.50	0.36
E821068	11	37.9	1.72	0.90	7.33	1.99	1.13	< 0.1	56	64.4	316	3.26	3.8	33.8	1.0	1.4	0.3	70	< 0.05	3.11	10.8	0.55	0.17
E821069	< 1	30.9	1.92	1.40	7.47	0.60	3.10	< 0.1	55	63.1	801	5.82	3.1	34.4	2.5	1.0	0.8	70	< 0.05	1.07	17.7	0.76	0.16
E821070	< 1	6.1	1.44	1.30	5.22	2.51	2.91	< 0.1	61	66.3	567	3.72	0.9	26.4	1.4	1.2	0.5	60	1.24	17.7	16.8	0.61	0.76
E821071	< 1	12.7	2.30	0.66	6.49	1.42	1.98	< 0.1	61	59.8	350	2.97	0.4	17.9	0.7	1.2	0.3	70	< 0.05	1.05	6.6	0.52	0.12
E821072	< 1	12.3	2.11	0.88	7.09	1.23	2.08	< 0.1	49	85.7	477	3.01	3.4	26.3	1.2	1.4	0.4	60	< 0.05	0.74	9.7	0.70	0.12
E821073	< 1	11.7	2.24	0.83	6.91	1.31	2.10	< 0.1	43	73.7	460	2.69	3.9	25.1	1.3	1.3	0.4	40	< 0.05	0.75	8.9	0.70	0.10
E821074	< 1	13.5	2.34	0.73	6.66	1.29	1.97	< 0.1	48	93.6	376	2.42	3.1	22.5	1.0	1.2	0.3	< 10	< 0.05	0.76	7.9	0.55	0.10
E821075	< 1	13.9	2.26	0.75	6.68	1.32	1.91	< 0.1	64	87.1	445	3.49	5.0	25.7	1.0	1.1	0.3	< 10	< 0.05	0.80	9.8	0.57	0.11
E837367	< 1	37.6	1.41	1.41	7.64	2.09	3.11	0.1	48	74.5	549	3.66	3.2	41.7	2.0	1.6	0.7	20	< 0.05	3.28	13.9	1.18	0.19
E837368	< 1	16.8	2.35	0.72	6.85	2.10	1.54	< 0.1	18	47.1	389	2.06	2.9	23.3	1.2	1.3	0.4	20	< 0.05	1.35	7.5	0.70	0.11
E837369	6	18.1	2.22	0.62	5.64	1.69	1.57	< 0.1	46	72.4	411	2.38	2.8	27.0	0.7	1.3	0.3	60	< 0.05	1.04	8.5	0.41	0.12
E837370	< 1	6.0	1.40	1.34	5.40	2.29	2.79	< 0.1	73	76.6	586	3.82	1.2	26.2	1.4	1.1	0.5	70	1.05	17.6	17.2	0.61	0.93
E837371	< 1	37.3	1.63	1.13	7.93	2.06	1.07	0.1	40	62.3	478	3.56	3.2	42.7	1.1	1.9	0.4	70	< 0.05	3.40	16.3	0.61	0.17
E837372	< 1	23.4	2.26	0.73	7.75	1.42	1.68	< 0.1	62	63.5	359	3.47	0.2	25.4	0.9	1.4	0.3	60	< 0.05	1.60	10.0	0.53	0.13
E837373	< 1	52.8	1.69	1.06	8.81	1.84	1.18	< 0.1	48	79.4	411	5.22	3.1	53.2	1.2	1.8	0.4	60	< 0.05	2.99	19.2	0.61	0.18
E837374	< 1	37.2	2.39	0.82	9.29	1.38	1.71	0.1	85	74.4	395	5.10	0.7	31.4	0.9	1.5	0.3	110	< 0.05	2.72	11.5	0.48	0.17
E837375	< 1	17.8	2.28	0.62	7.00	1.75	1.65	< 0.1	37	49.3	274	2.23	2.1	23.6	0.7	1.4	0.2	60	< 0.05	1.16	8.2	0.49	0.09
E837376	< 1	11.2	2.48	0.69	6.57	1.45	1.92	< 0.1	54	67.3	363	2.90	4.2	20.1	0.9	1.2	0.3	50	< 0.05	0.65	6.8	0.59	0.10
E837377	< 1	16.2	2.35	0.73	7.07	1.68	1.73	< 0.1	37	67.9	346	2.50	4.5	25.3	1.1	1.4	0.3	50	< 0.05	1.12	9.1	0.60	0.11
E837378	< 1	27.9	1.87	0.94	7.67	1.98	1.33	< 0.1	65	65.5	345	3.20	0.4	31.7	1.0	1.3	0.3	60	< 0.05	2.37	10.4	0.52	0.16
E837379	< 1	12.1	2.35	0.59	6.25	1.73	1.62	< 0.1	37	52.9	254	1.76	3.8	19.9	0.9	1.2	0.3	50	< 0.05	0.89	6.2	0.55	0.08
E837380	< 1	19.6	2.44	0.30	6.90	3.32	1.19	< 0.1	26	44.1	289	2.16	< 0.1	5.4	1.5	1.1	0.6	50	0.07	1.80	4.9	0.87	0.06
E837381	< 1	31.2	1.81	1.06	7.23	2.36	1.55	< 0.1	35	60.9	581	3.06	2.8	37.2	1.7	1.9	0.7	60	< 0.05	2.80	12.4	1.08	0.19
E837382	< 1	26.1	1.42	2.15	5.83	1.85	7.49	< 0.1	39	47.4	521	2.57	2.9	28.3	1.3	1.3	0.5	40	< 0.05	2.23	10.2	0.78	0.15
E837383	< 1	10.0	2.32	0.80	6.23	1.40	2.18	< 0.1	49	71.0	406	2.40	4.9	20.0	1.2	1.5	0.4	20	< 0.05	0.62	7.3	0.70	0.09
E837384	< 1	10.9	2.27	0.64	7.12	1.47	1.68	< 0.1	36	60.6	309	2.22	4.6	20.5	0.9	1.3	0.3	40	< 0.05	0.70	7.1	0.58	0.09
E837385	< 1	30.8	2.06	0.86	7.30	1.56	1.70	< 0.1	63	74.0	429	3.46	0.5	35.3	1.0	1.2	0.3	60	< 0.05	2.28	11.4	0.60	0.20
E837386	18	14.9	2.29	0.76	5.96	1.54	1.78	< 0.1	52	95.2	343	2.71	4.7	31.8	0.9	1.1	0.3	50	< 0.05	1.36	9.3	0.53	0.13

## Results

## Activation Laboratories Ltd.

## Report: A17-12624

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi	
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
E837387	< 1	17.6	1.96	0.64	6.04	1.56	1.46	< 0.1	50	60.7	294	2.39	3.8	20.4	0.8	1.1	0.3	60	< 0.05	2.08	6.9	0.47	0.14	
E837388	< 1	25.4	2.10	0.71	6.42	1.74	1.66	< 0.1	41	51.0	326	2.18	2.9	23.5	1.0	1.3	0.3	60	< 0.05	1.62	7.9	0.63	0.12	
E837389	< 1	8.1	2.50	0.54	6.59	1.69	1.78	< 0.1	30	34.1	278	1.41	0.1	13.5	0.8	1.3	0.3	50	< 0.05	0.64	4.9	0.50	0.06	
E837390	< 1	6.0	1.44	1.39	5.22	2.35	2.76	< 0.1	49	59.6	550	3.60	0.8	26.6	1.3	1.0	0.5	50	1.07	17.3	16.5	0.60	0.78	
E837391	< 1	36.4	2.31	1.28	7.12	1.53	2.29	< 0.1	36	90.3	469	3.30	2.9	47.4	1.0	1.3	0.3	50	< 0.05	2.20	16.1	0.60	0.62	
E837392	< 1	36.0	2.22	0.97	6.88	1.59	1.86	< 0.1	56	116	464	3.85	4.3	28.5	1.0	1.0	0.3	30	< 0.05	2.76	9.7	0.51	0.41	
E837393	< 1	42.9	2.01	1.12	6.67	1.40	1.86	< 0.1	92	136	467	4.74	3.9	49.9	0.8	1.2	0.3	10	< 0.05	2.76	14.5	0.45	0.39	
E837394	< 1	45.8	2.10	1.00	6.50	1.56	1.74	< 0.1	71	100.0	409	3.89	4.1	36.8	0.8	1.1	0.3	< 10	< 0.05	4.64	10.7	0.46	0.41	
E837395	< 1	10.1	2.43	0.64	6.41	1.35	1.83	< 0.1	35	67.6	308	2.11	2.2	18.6	0.8	1.1	0.3	10	< 0.05	0.61	7.4	0.51	0.08	
E837396	< 1	9.3	2.28	0.59	6.58	1.34	1.74	< 0.1	39	39.1	292	1.88	2.1	19.5	0.8	1.2	0.3	50	< 0.05	0.56	6.7	0.54	0.08	
E837397	5	20.1	2.40	1.07	5.85	1.49	2.25	< 0.1	65	112	475	2.92	3.3	40.9	0.7	1.1	0.2	60	< 0.05	1.13	13.6	0.38	0.15	
E837398	1	44.1	2.14	1.01	6.71	1.22	2.35	< 0.1	55	74.7	455	3.25	4.2	37.7	1.1	0.9	0.4	70	< 0.05	1.80	13.1	0.75	0.30	
E837399	< 1	69.8	1.57	2.84	6.52	1.08	2.38	< 0.1	89	478	794	6.26	8.2	103	1.4	1.0	0.4	60	< 0.05	2.38	22.4	0.67	0.16	
E837400	< 1	21.8	2.37	0.47	7.57	3.21	1.41	< 0.1	41	40.3	435	3.13	< 0.1	6.2	2.5	1.0	0.9	50	< 0.05	1.43	6.6	1.15	0.05	
E837459	< 1	14.9	2.10	1.33	6.05	1.72	3.66	< 0.1	45	61.5	384	2.18	3.1	24.5	1.2	1.2	0.4	60	< 0.05	1.20	8.2	0.75	0.10	
E821101	< 1	35.9	2.07	0.93	7.46	1.21	1.83	< 0.1	32	112	471	4.90	4.0	35.3	1.2	1.3	0.4	40	< 0.05	1.74	12.0	0.58	0.21	
E821102	< 1	12.0	2.39	0.62	6.28	1.71	1.84	< 0.1	44	102	334	2.15	3.1	21.6	1.1	1.3	0.4	40	< 0.05	0.87	6.7	0.69	0.12	
E821103	< 1	9.4	2.64	0.57	6.17	1.55	1.83	< 0.1	31	42.3	272	1.43	1.5	15.1	0.6	1.2	0.2	< 10	< 0.05	0.69	5.4	0.43	0.07	
E821104	< 1	34.1	2.11	1.03	7.17	1.44	1.89	< 0.1	65	108	439	3.81	3.5	49.3	1.2	1.5	0.4	20	< 0.05	1.93	15.9	0.67	2.11	
E821105	< 1	7.8	2.43	0.62	6.24	1.49	2.04	< 0.1	35	55.0	317	1.68	3.2	17.9	0.9	1.0	0.3	40	< 0.05	0.60	5.7	0.59	0.07	
E821106	< 1	33.3	2.61	0.92	7.22	1.67	2.13	< 0.1	48	74.7	484	2.61	2.5	29.2	1.0	1.1	0.4	50	< 0.05	1.89	10.3	0.57	0.17	
E821107	3	12.1	2.38	0.64	5.44	1.40	1.93	< 0.1	44	90.5	335	1.88	4.2	19.1	0.8	1.0	0.3	50	< 0.05	0.80	5.9	0.48	0.11	
E821108	< 1	8.9	2.46	0.68	6.51	1.57	1.90	< 0.1	39	59.0	322	1.66	2.8	17.7	0.7	1.0	0.2	50	< 0.05	0.70	5.8	0.45	0.07	
E821109	< 1	37.9	1.46	2.20	6.89	2.25	5.71	< 0.1	57	64.6	761	3.49	3.0	40.4	1.7	1.6	0.6	60	< 0.05	3.20	13.8	0.93	0.19	
E821110	< 1	5.9	1.39	1.36	5.38	2.29	2.78	< 0.1	65	67.1	557	3.62	1.1	26.0	1.4	1.1	0.5	40	1.07	17.4	17.2	0.60	0.78	
E821111	< 1	39.0	1.61	2.27	6.94	2.26	5.23	0.1	58	57.1	987	4.00	2.7	42.0	1.6	1.7	0.6	40	< 0.05	3.51	17.5	0.90	0.20	
E821112	< 1	7.8	2.57	0.67	6.33	1.52	2.00	< 0.1	37	49.2	306	1.62	2.3	22.2	1.0	1.2	0.3	40	< 0.05	0.49	6.0	0.55	0.08	
E821113	< 1	14.0	2.41	0.78	6.66	1.73	2.00	< 0.1	44	67.0	513	2.18	2.3	21.3	1.2	1.2	0.4	60	< 0.05	0.95	8.7	0.68	0.10	
E821114	< 1	23.2	2.22	0.98	7.66	2.07	1.75	< 0.1	33	71.3	431	2.63	3.4	30.6	1.5	1.5	0.5	40	< 0.05	1.89	10.0	0.91	0.16	
E821115	< 1	12.1	2.31	0.70	6.43	1.67	1.92	< 0.1	41	47.8	308	1.97	2.3	19.8	1.2	1.2	0.4	50	< 0.05	0.85	7.0	0.75	0.09	
GXR-1 Meas	< 1	8.3	0.04	0.20	2.01	0.04	0.83	2.7	75	12.4	944	24.3	0.4	37.0		1.1		3590	30.7	2.69	7.7	0.56	1400	
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380	
GXR-1 Meas	< 1	8.0	0.04	0.20	2.06	0.04	0.79	2.8	77	16.2	926	26.2	0.5	38.0		1.0		2980	32.0	2.80	8.7	0.56	1360	
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380	
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas	< 1	10.6	0.48	1.75	6.32	3.71	0.90	0.3	80	39.4	141	2.98	1.3	35.9		2.0		110	3.29	2.36	13.5	1.22	17.0	
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0	
GXR-4 Meas	< 1	10.8	0.44	1.60	6.23	3.83	0.94	0.3	83	40.2	155	3.07	1.2	36.7		1.9		230	3.21	2.26	13.8	1.23	17.3	
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0	
SDC-1 Meas	< 1	35.7	1.61	1.09	8.08	2.27	1.02		57	65.6	953	5.27	1.2	34.8	3.4	3.1	1.2	60		3.54	19.1	1.35		

## Results

## Activation Laboratories Ltd.

## Report: A17-12624

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	< 1	34.5	1.59	1.08	8.31	2.23	0.97		54	58.6	918	5.03	1.2	34.5	3.4	2.7	1.1	70		3.74	19.2	1.29	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	37.3	0.10	0.73	> 10.0	1.89	0.19	0.1	113	47.1	1100	6.35	1.9	26.0		1.2		100	0.14	3.62	15.0	0.58	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
GXR-6 Meas	< 1	36.3	0.10	0.66	> 10.0	1.96	0.18	< 0.1	135	55.1	1110	5.92	2.3	24.2		1.2		70	0.13	3.78	14.1	0.54	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.7							142	183											62.3	0.49	
DNC-1a Cert		5.2							148	270											57	0.59	
DNC-1a Meas		4.6							139	164											59.8	0.49	
DNC-1a Cert		5.2							148	270											57	0.59	
SBC-1 Meas		170						0.4	243	79.9			3.2	88.9	3.6	3.4	1.2			7.51	24.5	1.71	0.66
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
SBC-1 Meas		164						0.4	237	92.9			3.6	87.7	3.8	3.3	1.2			7.82	25.5	1.69	0.64
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.4	0.08	0.24	7.35	0.42	0.17		104	554	515	15.5	1.8	224	1.3	0.7	0.4			3.36	31.9	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		21.1	0.08	0.22	7.43	0.41	0.18		72	467	506	14.4	1.0	218	1.3	0.7	0.4			3.27	29.8	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		19.3						5.7	23	45.4			1.2	55.4	2.9	7.4	0.9	1150		1.62	15.6	1.20	1.03
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		17.4						5.7	21	37.2			3.8	48.7	2.8	6.7	0.9	1010		1.72	14.3	1.17	0.99
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
E837417 Orig	< 1	18.6	2.16	0.89	6.96	1.69	1.85	< 0.1	34	109	375	3.92	3.3	33.1	0.8	1.1	0.3	60	< 0.05	2.52	9.1	0.51	0.23
E837417 Dup	< 1	18.3	2.29	0.91	7.13	1.73	1.87	< 0.1	17	110	386	3.95	2.0	34.7	0.9	1.1	0.3	60	< 0.05	2.56	9.0	0.49	0.22
E837355 Orig	< 1	26.1	2.38	0.94	7.93	1.56	1.99	< 0.1	31	78.2	384	3.24	2.7	40.4	0.9	1.3	0.3	40	< 0.05	1.48	13.3	0.54	0.16
E837355 Dup	< 1	25.6	2.23	0.98	7.67	1.54	1.94	< 0.1	31	73.0	373	3.31	3.2	40.3	0.9	1.3	0.3	40	< 0.05	1.46	13.4	0.54	0.16
E837357 Orig	< 1	31.0	2.05	0.99	7.98	0.87	1.91	< 0.1	85	113	421	5.61	1.9	38.3	0.9	1.3	0.3	90	< 0.05	2.14	10.9	0.48	0.22
E837357 Dup	< 1	30.3	2.14	1.00	7.94	0.99	2.07	< 0.1	50	129	436	5.37	1.5	39.5	0.8	1.2	0.3	70	< 0.05	2.02	11.5	0.47	0.22
E837377 Orig	< 1	16.2	2.35	0.73	7.07	1.68	1.73	< 0.1	37	67.9	346	2.50	4.5	25.3	1.1	1.4	0.3	50	< 0.05	1.12	9.1	0.60	0.11
E837377 Dup	< 1	16.1	2.25	0.71	7.37	1.71	1.74	< 0.1	39	59.1	327	2.37	3.6	25.1	1.0	1.4	0.3	50	< 0.05	1.12	9.2	0.62	0.10
E837382 Orig	< 1	26.1	1.42	2.15	5.83	1.85	7.49	< 0.1	39	47.4	521	2.57	2.9	28.3	1.3	1.3	0.5	40	< 0.05	2.23	10.2	0.78	0.15
E837382 Dup	< 1	25.9	1.39	2.10	5.39	1.74	7.18	< 0.1	54	51.3	520	2.64	3.3	29.8	1.4	1.2	0.4	10	< 0.05	2.16	10.4	0.76	0.14
E821112 Orig	< 1	7.8	2.57	0.67	6.33	1.52	2.00	< 0.1	37	49.2	306	1.62	2.3	22.2	1.0	1.2	0.3	40	< 0.05	0.49	6.0	0.55	0.08
E821112 Dup	< 1	7.7	2.62	0.66	6.57	1.53	1.97	< 0.1	37	49.7	298	1.59	1.7	16.6	0.8	1.1	0.3	30	< 0.05	0.46	5.9	0.58	0.07
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	9.8	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	10	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02

## Results

## Activation Laboratories Ltd.

## Report: A17-12624

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	6.1	9	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	4	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.9	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	8.6	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837417	0.3	40.3	22.3	0.8	50.6	7.8	157	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	504	7.8	16.6	2.1	8.5	1.5	1.5	0.2	1.4	7.5
E837418	0.3	25.3	14.7	< 0.1	47.7	7.5	162	1.3	0.24	< 0.1	< 1	< 0.1	< 0.1	541	11.9	26.1	2.8	10.7	2.2	1.7	0.2	1.5	1.2
E837419	0.5	66.5	19.8	9.2	93.3	15.2	153	0.5	0.39	< 0.1	1	< 0.1	< 0.1	646	31.6	62.4	7.1	26.9	3.6	3.5	0.5	3.0	27.3
E837420	0.3	51.3	20.5	< 0.1	114	9.4	145	3.7	1.89	< 0.1	< 1	0.1	< 0.1	910	72.6	146	14.7	52.1	7.0	4.7	0.4	2.1	7.0
E837421	0.4	59.1	18.2	3.1	90.7	10.6	152	0.6	0.18	< 0.1	< 1	< 0.1	< 0.1	673	21.5	48.2	4.9	18.2	2.6	2.6	0.3	2.2	13.6
E837422	0.5	41.3	16.0	4.1	62.9	12.5	186	5.2	0.40	< 0.1	1	0.1	< 0.1	607	26.3	53.0	5.8	22.0	3.2	3.0	0.4	2.6	11.2
E837423	0.8	62.6	23.6	1.3	54.5	9.3	120	3.3	0.85	< 0.1	2	< 0.1	< 0.1	414	12.4	24.6	2.8	10.5	1.8	1.8	0.3	1.8	19.8
E837424	0.5	47.2	18.8	0.8	60.4	9.3	179	0.1	0.22	< 0.1	< 1	< 0.1	< 0.1	528	29.5	55.3	6.0	22.1	3.4	3.0	0.3	1.9	17.6
E837425	0.4	29.1	15.6	1.2	29.0	5.0	158	8.3	0.85	< 0.1	1	0.2	< 0.1	466	5.4	12.4	1.5	5.9	1.2	1.1	0.2	1.2	15.3
E837426	0.5	29.6	15.6	1.1	45.0	8.2	186	6.1	0.86	< 0.1	1	0.1	< 0.1	490	10.8	22.2	2.7	9.8	1.7	1.7	0.2	1.6	14.3
E837427	0.5	45.9	18.6	0.6	45.2	10.3	266	0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	399	13.0	26.6	3.1	11.1	2.3	2.1	0.3	2.0	17.2
E837428	0.7	76.4	17.4	< 0.1	47.6	18.2	151	< 0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	396	45.3	103	9.7	33.7	5.2	4.6	0.6	3.8	45.9
E837429	0.3	47.5	17.7	< 0.1	37.5	9.7	199	0.2	0.20	< 0.1	< 1	< 0.1	< 0.1	398	18.0	34.8	3.9	14.2	2.1	2.2	0.3	1.9	15.4
E837430	0.2	53.3	14.1	4.6	580	12.9	38	< 0.1	0.26	< 0.1	< 1	< 0.1	< 0.1	60	4.0	9.6	1.4	6.4	1.9	2.4	0.4	2.6	35.2
E837431	0.3	68.0	23.0	1.5	48.9	11.0	143	0.3	0.36	< 0.1	< 1	< 0.1	< 0.1	394	10.0	20.4	2.3	8.6	1.8	1.9	0.3	2.0	29.7
E837432	0.4	23.4	13.9	< 0.1	45.5	9.2	165	0.5	0.24	< 0.1	< 1	< 0.1	< 0.1	534	14.5	29.7	3.5	13.3	2.5	2.2	0.3	1.9	7.9
E837433	0.9	49.8	21.6	1.5	52.6	8.4	103	0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	442	13.5	25.5	2.9	10.5	1.9	1.8	0.2	1.7	88.1
E837434	0.6	48.3	18.4	0.5	42.0	11.7	148	2.2	0.30	< 0.1	< 1	< 0.1	< 0.1	372	23.5	47.1	5.5	19.3	3.2	2.9	0.4	2.3	14.7
E837435	0.3	70.5	23.8	1.2	59.2	10.3	157	0.8	0.51	< 0.1	< 1	< 0.1	< 0.1	436	12.2	23.9	2.7	10.8	1.9	2.0	0.3	1.9	20.7
E837436	0.9	73.0	19.6	2.0	27.3	7.2	121	6.5	0.99	< 0.1	1	< 0.1	< 0.1	328	6.6	13.5	1.7	6.8	1.3	1.4	0.2	1.5	31.7
E837437	0.8	51.3	23.6	2.6	52.3	7.8	107	2.9	1.04	< 0.1	1	< 0.1	< 0.1	434	16.8	31.8	3.6	13.0	2.2	2.1	0.3	1.7	12.7
E837438	0.3	32.8	17.3	< 0.1	50.8	7.5	184	0.1	0.21	< 0.1	< 1	< 0.1	< 0.1	495	10.2	20.7	2.4	9.1	1.5	1.6	0.2	1.6	10.5
E837439	0.4	54.1	23.6	1.9	67.2	8.0	129	1.3	0.24	< 0.1	< 1	< 0.1	< 0.1	478	7.8	16.0	1.8	6.5	1.3	1.4	0.2	1.6	12.3
E837440	0.3	38.7	19.2	< 0.1	107	4.8	197	3.1	1.42	< 0.1	< 1	0.1	< 0.1	809	63.8	136	12.0	39.4	5.2	3.8	0.3	1.4	5.7
E837441	0.4	26.9	14.6	< 0.1	38.1	10.7	201	0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	433	15.8	32.8	3.9	14.8	2.3	2.3	0.3	2.0	< 0.2
E837442	0.5	58.0	17.2	0.1	50.6	10.2	118	0.2	0.15	< 0.1	< 1	< 0.1	< 0.1	421	15.4	34.4	3.5	13.2	2.0	2.2	0.3	2.0	15.1
E837443	0.4	69.7	18.6	0.3	56.9	11.7	106	0.2	0.14	< 0.1	< 1	< 0.1	< 0.1	480	13.5	30.2	3.3	12.7	2.2	2.4	0.3	2.4	22.0
E837444	0.4	49.5	23.8	< 0.1	49.4	9.6	77	0.2	0.11	< 0.1	< 1	< 0.1	< 0.1	362	35.8	83.4	9.9	39.1	6.0	4.4	0.4	2.4	38.5
E837445	0.5	66.8	26.5	< 0.1	55.0	8.3	107	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	402	10.5	20.0	2.4	9.0	1.8	1.7	0.2	1.5	9.6
E837446	0.7	73.5	21.2	3.2	26.6	6.2	119	9.8	1.01	< 0.1	2	0.2	< 0.1	411	5.9	13.2	1.6	6.4	1.1	1.4	0.2	1.4	35.5
E837447	0.5	31.2	17.0	1.3	41.2	7.4	100	1.2	0.44	< 0.1	< 1	< 0.1	< 0.1	400	8.8	17.1	2.3	8.1	1.4	1.5	0.2	1.5	14.5
E837448	0.5	50.3	25.2	1.7	68.3	8.1	136	0.4	0.16	< 0.1	< 1	< 0.1	< 0.1	437	8.4	17.0	1.9	7.1	1.3	1.4	0.2	1.5	12.5
E837449	0.3	38.4	20.9	2.3	49.2	7.3	129	< 0.1	0.20	< 0.1	< 1	< 0.1	< 0.1	466	9.8	18.8	2.2	8.0	1.7	1.4	0.2	1.4	13.4
E837450	0.3	51.4	13.7	4.2	584	13.0	30	< 0.1	0.19	< 0.1	< 1	< 0.1	< 0.1	64	3.8	9.3	1.3	6.4	1.6	2.3	0.4	2.5	33.2
E837351	0.4	54.0	20.6	< 0.1	59.3	8.6	90	0.2	0.13	< 0.1	< 1	< 0.1	< 0.1	400	8.6	16.8	1.9	7.3	1.4	1.5	0.2	1.6	13.7

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837352	0.4	53.2	23.0	1.2	67.4	7.3	109	1.0	0.19	< 0.1	< 1	< 0.1	< 0.1	474	7.8	15.5	1.8	6.9	1.4	1.3	0.2	1.3	11.1
E837353	0.5	57.5	19.2	1.9	61.9	7.8	107	0.1	0.23	< 0.1	< 1	< 0.1	< 0.1	492	11.5	22.4	2.4	9.4	1.7	1.6	0.2	1.5	13.2
E837354	0.4	32.7	15.5	< 0.1	43.8	8.1	115	0.2	0.14	< 0.1	< 1	< 0.1	< 0.1	503	12.5	26.3	2.8	10.9	1.9	1.9	0.2	1.5	10.4
E837355	0.4	29.7	16.4	< 0.1	43.6	8.1	121	0.4	0.15	< 0.1	< 1	< 0.1	< 0.1	490	11.3	23.7	2.7	9.9	1.9	1.7	0.2	1.6	11.1
E837356	0.5	49.1	17.9	2.4	58.8	9.9	138	0.2	0.19	< 0.1	< 1	< 0.1	< 0.1	487	22.3	45.2	4.7	17.2	2.8	2.5	0.3	2.0	16.4
E837357	1.0	51.8	18.5	1.7	37.3	7.9	81	0.6	0.43	< 0.1	< 1	< 0.1	< 0.1	292	13.7	25.2	2.7	9.9	1.8	1.8	0.2	1.6	17.5
E837358	0.5	23.8	14.9	0.2	45.0	8.1	30	2.3	0.43	< 0.1	< 1	< 0.1	< 0.1	535	10.8	23.5	2.8	11.1	2.1	1.8	0.2	1.5	8.4
E837359	0.3	19.3	13.9	< 0.1	42.9	8.7	57	2.6	0.30	< 0.1	< 1	< 0.1	< 0.1	518	13.9	30.2	3.5	13.2	2.1	2.1	0.3	1.8	0.7
E837360	0.4	51.3	19.9	< 0.1	131	15.6	34	0.6	3.03	< 0.1	< 1	0.1	< 0.1	985	93.7	189	19.7	70.6	9.5	8.1	0.8	3.8	8.0
E837361	0.4	24.0	14.4	< 0.1	50.2	9.7	206	1.2	0.43	< 0.1	< 1	< 0.1	< 0.1	545	16.0	32.5	3.8	14.7	2.5	2.3	0.3	1.9	4.0
E837362	0.4	28.5	14.7	< 0.1	52.4	7.9	147	0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	540	12.0	24.6	2.9	11.3	2.1	1.7	0.2	1.5	3.8
E837363	0.5	59.9	19.3	0.8	89.9	28.9	104	0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	646	58.6	108	15.0	57.7	9.9	8.1	1.0	6.3	24.3
E837364	0.6	32.6	14.7	< 0.1	34.7	12.9	337	8.4	0.54	< 0.1	1	< 0.1	< 0.1	456	16.7	35.6	4.4	17.8	3.5	3.0	0.4	2.5	5.4
E837365	0.4	19.1	14.2	0.2	43.2	8.6	52	4.6	0.35	< 0.1	< 1	0.1	< 0.1	515	13.5	27.9	3.3	13.0	2.4	2.0	0.3	1.7	< 0.2
E837366	0.5	38.0	17.6	1.4	60.8	9.7	169	0.2	0.41	< 0.1	< 1	< 0.1	< 0.1	568	19.3	41.9	4.3	16.1	2.4	2.3	0.3	1.9	10.5
E821060	0.3	55.7	19.2	< 0.1	140	21.7	35	0.3	3.05	< 0.1	< 1	< 0.1	< 0.1	960	130	265	29.1	100	13.5	9.9	0.9	5.0	5.5
E821061	0.6	48.1	18.9	0.7	45.2	10.4	101	2.7	0.72	< 0.1	1	< 0.1	< 0.1	480	18.0	34.9	3.9	15.0	2.5	2.3	0.3	2.1	16.7
E821062	0.4	37.1	14.7	< 0.1	40.8	11.2	137	0.3	0.21	< 0.1	< 1	< 0.1	< 0.1	469	24.2	53.1	5.7	21.7	3.6	2.9	0.4	2.3	4.3
E821063	0.2	47.0	18.9	0.3	74.2	8.2	118	< 0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	588	15.5	29.7	3.3	12.4	2.2	1.9	0.2	1.6	10.9
E821064	0.6	64.0	21.4	9.3	71.2	10.3	168	12.7	1.82	< 0.1	2	0.2	< 0.1	483	22.9	45.2	4.5	16.8	2.5	2.5	0.3	2.0	34.9
E821065	0.4	57.5	19.5	2.1	57.9	9.2	247	5.5	1.89	< 0.1	1	< 0.1	< 0.1	555	15.8	31.7	3.4	13.0	2.2	2.2	0.3	1.7	14.7
E821066	0.4	55.5	17.7	0.2	45.1	9.4	139	0.3	0.19	< 0.1	< 1	< 0.1	< 0.1	426	15.0	28.2	3.1	11.7	2.1	1.9	0.3	1.7	22.2
E821067	0.6	48.5	17.1	< 0.1	44.4	8.8	185	9.1	1.15	< 0.1	2	0.1	0.4	564	12.3	26.6	3.2	12.1	2.2	2.0	0.3	1.8	18.8
E821068	0.6	44.0	16.8	1.4	70.2	8.8	162	0.5	0.47	< 0.1	1	< 0.1	< 0.1	602	17.8	34.9	3.9	14.1	2.2	2.0	0.3	1.7	15.8
E821069	0.4	70.4	19.1	< 0.1	16.2	21.0	131	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	253	11.2	20.0	2.4	9.6	2.7	3.4	0.5	3.8	11.8
E821070	0.4	47.3	13.6	5.3	584	12.9	39	< 0.1	0.33	< 0.1	1	< 0.1	< 0.1	60	3.9	9.4	1.3	6.2	1.8	2.4	0.4	2.7	32.7
E821071	0.4	26.2	17.1	< 0.1	44.1	6.8	39	1.8	0.45	< 0.1	< 1	< 0.1	< 0.1	462	13.3	25.0	2.9	10.5	1.8	1.6	0.2	1.3	3.0
E821072	0.6	31.6	14.1	< 0.1	36.4	11.5	143	0.3	0.18	< 0.1	< 1	< 0.1	< 0.1	415	14.2	29.0	3.5	14.2	2.6	2.5	0.3	2.2	2.1
E821073	0.4	28.6	14.2	< 0.1	37.8	11.2	143	0.4	0.20	< 0.1	< 1	< 0.1	< 0.1	433	17.6	36.6	4.4	17.5	3.2	2.8	0.4	2.1	2.0
E821074	0.4	30.6	14.9	0.8	33.8	8.5	131	4.0	0.39	< 0.1	< 1	< 0.1	< 0.1	454	14.9	29.6	3.4	13.0	1.9	1.9	0.3	1.6	2.9
E821075	0.4	30.4	14.7	< 0.1	34.6	9.5	207	8.3	0.55	< 0.1	1	0.1	< 0.1	460	14.3	29.8	3.6	13.9	2.3	2.2	0.3	2.0	4.1
E837367	0.5	55.9	17.3	0.9	77.6	19.6	130	3.1	0.20	< 0.1	1	< 0.1	< 0.1	592	49.4	77.4	10.8	39.9	6.0	5.0	0.6	3.9	23.1
E837368	0.4	30.5	15.2	< 0.1	64.0	10.4	119	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	584	20.3	41.8	4.6	17.4	3.1	2.6	0.3	2.1	3.3
E837369	0.3	33.2	14.4	1.3	38.7	5.6	119	7.1	0.46	< 0.1	< 1	0.2	< 0.1	537	6.2	17.6	1.8	7.3	1.4	1.4	0.2	1.3	5.5
E837370	0.3	48.5	13.7	5.7	568	12.7	52	< 0.1	1.24	< 0.1	< 1	< 0.1	< 0.1	55	3.9	9.5	1.3	6.2	1.8	2.4	0.4	2.5	34.6
E837371	0.5	72.5	18.9	0.3	85.4	10.1	126	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	671	24.3	58.7	5.1	18.4	2.6	2.5	0.3	2.0	13.4
E837372	0.5	46.5	16.4	1.1	50.7	8.1	17	1.4	0.44	< 0.1	< 1	< 0.1	< 0.1	479	12.7	25.3	2.8	11.1	1.9	1.8	0.2	1.5	9.3
E837373	0.5	58.3	19.3	0.8	64.0	10.9	131	0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	588	19.5	39.3	4.3	16.1	2.3	2.3	0.3	2.1	18.9
E837374	0.7	96.2	21.4	1.8	55.7	7.7	62	3.0	1.09	< 0.1	< 1	< 0.1	< 0.1	441	14.9	27.3	3.1	11.2	2.0	1.8	0.2	1.5	19.8
E837375	0.4	23.9	15.3	0.2	50.1	6.5	88	0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	542	9.3	18.6	2.1	8.2	1.6	1.4	0.2	1.3	3.4
E837376	0.5	22.5	14.3	< 0.1	41.0	8.7	174	0.5	0.29	< 0.1	< 1	< 0.1	< 0.1	458	13.7	27.2	3.3	12.6	2.2	2.0	0.3	1.7	4.5
E837377	0.3	26.4	14.6	0.3	50.4	9.3	194	0.3	0.21	< 0.1	< 1	< 0.1	< 0.1	537	13.2	27.6	3.3	12.6	2.2	2.0	0.3	1.8	1.6
E837378	0.3	41.6	17.7	2.4	69.4	8.8	53	0.3	0.85	< 0.1	< 1	< 0.1	< 0.1	587	14.7	30.3	3.2	12.2	2.1	2.0	0.2	1.6	11.8



## Results

## Activation Laboratories Ltd.

## Report: A17-12624

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837379	0.4	19.9	13.8	0.3	49.2	7.8	166	1.5	0.28	< 0.1	< 1	< 0.1	< 0.1	550	12.9	26.8	3.1	12.0	1.9	1.8	0.2	1.4	1.7
E837380	0.3	40.2	18.2	< 0.1	109	16.1	12	0.6	4.21	< 0.1	< 1	< 0.1	< 0.1	921	142	289	30.3	99.2	13.5	9.3	0.8	4.1	12.5
E837381	0.4	50.1	16.6	0.5	82.1	16.8	113	< 0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	638	38.6	73.6	8.6	32.0	5.4	4.4	0.5	3.3	18.2
E837382	0.3	42.0	12.4	2.3	65.5	12.4	115	0.3	0.25	< 0.1	< 1	< 0.1	< 0.1	528	27.4	55.2	6.2	22.8	3.9	3.2	0.4	2.6	15.1
E837383	0.4	22.0	14.8	< 0.1	38.2	10.7	209	1.2	0.23	< 0.1	1	< 0.1	< 0.1	457	15.0	31.6	3.8	15.2	2.5	2.5	0.3	2.1	< 0.2
E837384	0.4	21.8	13.4	< 0.1	40.0	8.1	192	0.3	0.21	< 0.1	< 1	< 0.1	< 0.1	482	13.3	27.3	3.2	12.3	1.9	1.9	0.3	1.7	1.5
E837385	0.6	60.2	17.5	1.1	56.2	9.2	50	2.1	0.63	< 0.1	< 1	< 0.1	< 0.1	492	16.1	29.5	3.5	13.2	2.1	2.1	0.3	1.8	13.6
E837386	0.3	32.3	14.6	< 0.1	37.8	8.4	203	4.8	0.38	< 0.1	1	< 0.1	< 0.1	494	13.4	33.4	3.3	13.0	2.3	2.0	0.3	1.7	13.6
E837387	0.3	22.0	15.2	0.3	56.3	7.0	162	0.1	0.34	< 0.1	< 1	< 0.1	< 0.1	535	10.6	21.4	2.4	9.0	1.6	1.5	0.2	1.4	4.5
E837388	0.4	30.1	14.6	0.2	58.0	8.5	120	0.1	0.23	< 0.1	< 1	< 0.1	< 0.1	560	17.7	33.6	4.0	15.1	2.5	2.2	0.3	1.7	4.7
E837389	0.4	17.3	13.6	< 0.1	44.4	6.8	10	1.1	0.33	< 0.1	< 1	< 0.1	< 0.1	524	10.5	21.1	2.5	9.4	1.9	1.5	0.2	1.4	0.4
E837390	0.2	49.9	13.7	4.8	582	12.8	35	< 0.1	0.30	< 0.1	1	< 0.1	< 0.1	55	3.9	9.2	1.3	6.1	1.9	2.3	0.4	2.5	31.1
E837391	0.4	46.6	15.4	1.6	47.5	9.0	121	0.3	0.13	< 0.1	< 1	< 0.1	< 0.1	459	13.7	28.1	3.2	12.0	2.4	2.0	0.3	1.8	14.3
E837392	0.4	51.1	23.7	1.3	54.4	8.8	177	0.4	0.31	< 0.1	2	< 0.1	< 0.1	469	10.7	21.8	2.5	9.8	1.8	1.9	0.2	1.7	8.7
E837393	0.5	51.1	18.1	4.4	38.9	7.1	157	8.9	0.85	< 0.1	1	0.1	< 0.1	458	10.0	20.4	2.4	9.1	1.6	1.6	0.2	1.5	17.2
E837394	0.4	33.1	18.2	2.1	48.2	7.3	175	4.5	0.58	< 0.1	1	< 0.1	< 0.1	455	10.6	21.2	2.4	9.0	1.5	1.6	0.2	1.5	13.0
E837395	0.2	17.1	13.2	< 0.1	37.7	7.2	91	0.9	0.18	< 0.1	< 1	< 0.1	< 0.1	458	8.3	17.3	2.1	8.9	1.7	1.6	0.2	1.5	< 0.2
E837396	0.3	16.6	13.2	0.2	38.3	7.6	83	2.6	0.26	< 0.1	< 1	< 0.1	< 0.1	455	8.9	19.4	2.4	9.6	1.9	1.7	0.2	1.4	< 0.2
E837397	0.4	30.5	15.1	0.8	26.4	6.0	137	6.7	0.32	< 0.1	1	0.1	< 0.1	443	5.3	12.1	1.4	6.0	1.1	1.3	0.2	1.3	17.9
E837398	0.4	41.9	15.1	0.5	41.5	10.0	182	0.2	0.26	< 0.1	< 1	< 0.1	< 0.1	430	18.4	43.1	4.3	15.9	2.7	2.6	0.3	2.0	13.7
E837399	0.3	70.8	16.1	6.3	38.0	12.2	346	0.8	0.27	< 0.1	< 1	< 0.1	< 0.1	306	29.3	55.2	5.9	21.2	3.2	3.0	0.4	2.3	16.9
E837400	0.2	64.0	19.8	< 0.1	132	24.8	23	0.2	4.16	< 0.1	< 1	< 0.1	< 0.1	977	155	329	36.0	124	16.0	11.1	1.1	6.0	8.4
E837459	0.3	28.8	13.2	1.4	50.6	11.6	130	2.1	0.63	< 0.1	< 1	< 0.1	< 0.1	487	20.7	42.2	4.9	18.7	3.1	2.7	0.4	2.3	7.5
E821101	0.3	32.5	16.1	0.5	37.3	9.9	160	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	414	15.5	30.1	3.4	13.1	2.3	2.2	0.3	2.0	10.6
E821102	0.3	22.2	13.0	0.4	43.9	9.9	179	1.4	0.37	< 0.1	< 1	< 0.1	< 0.1	542	18.3	37.0	4.3	16.4	2.3	2.5	0.3	2.0	7.1
E821103	0.4	14.5	13.7	< 0.1	39.7	5.3	75	3.2	0.22	< 0.1	< 1	< 0.1	< 0.1	497	7.6	15.6	1.8	6.9	1.2	1.1	0.2	1.0	< 0.2
E821104	0.4	38.5	14.8	1.8	38.5	10.2	143	6.8	1.07	< 0.1	1	0.1	< 0.1	463	19.0	40.1	4.5	17.1	2.7	2.6	0.3	2.1	20.4
E821105	0.4	17.6	13.5	< 0.1	40.8	8.6	141	1.4	0.25	< 0.1	< 1	< 0.1	< 0.1	474	11.3	22.9	3.0	11.6	1.9	1.9	0.3	1.7	6.6
E821106	0.3	39.3	15.7	< 0.1	53.7	9.4	130	< 0.1	0.29	< 0.1	< 1	< 0.1	< 0.1	472	16.6	32.8	3.6	13.4	2.1	2.0	0.3	1.8	7.7
E821107	0.3	26.6	13.9	0.1	30.3	6.7	176	6.0	0.40	< 0.1	< 1	0.1	< 0.1	455	9.1	18.3	2.3	8.9	1.5	1.5	0.2	1.3	< 0.2
E821108	0.2	18.4	14.7	< 0.1	42.9	6.6	115	2.2	0.29	< 0.1	< 1	< 0.1	< 0.1	502	11.5	22.7	2.6	9.6	1.7	1.5	0.2	1.3	< 0.2
E821109	0.4	61.5	15.8	1.7	85.7	15.8	121	0.2	0.17	< 0.1	< 1	< 0.1	< 0.1	578	37.0	74.0	8.2	29.8	5.0	4.2	0.5	3.1	21.3
E821110	0.4	46.5	13.7	4.6	575	12.8	48	< 0.1	1.03	< 0.1	< 1	< 0.1	< 0.1	59	3.9	9.4	1.3	6.3	1.8	2.4	0.4	2.4	33.2
E821111	0.5	72.9	17.0	4.5	86.7	14.8	106	0.3	0.24	< 0.1	< 1	< 0.1	< 0.1	594	36.6	75.7	9.1	29.8	4.6	3.8	0.5	2.9	24.9
E821112	0.4	15.9	13.8	< 0.1	40.1	9.1	93	3.2	0.34	< 0.1	< 1	< 0.1	< 0.1	485	12.3	25.6	3.0	11.3	1.8	1.9	0.3	1.7	8.0
E821113	0.4	26.5	14.5	< 0.1	47.6	10.4	133	0.5	0.38	< 0.1	< 1	< 0.1	< 0.1	514	16.9	36.1	4.1	16.1	2.5	2.5	0.3	2.1	2.0
E821114	0.3	37.8	16.9	< 0.1	69.9	14.1	138	0.2	0.13	< 0.1	< 1	< 0.1	< 0.1	596	29.1	51.2	6.6	24.6	4.5	3.5	0.4	2.8	12.7
E821115	0.4	21.5	14.1	< 0.1	47.7	11.2	151	1.1	0.35	< 0.1	< 1	< 0.1	< 0.1	549	19.7	40.3	4.7	17.8	3.0	2.7	0.3	2.2	2.8
GXR-1 Meas	15.6	752	11.2	425	2.4	27.0	20	0.8	18.9	0.8	28	29.3	8.8	687	6.9	14.3		8.3	2.4	3.8	0.7	4.8	1110
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
GXR-1 Meas	15.0	762	11.8	427	2.5	26.4	23	0.9	19.3	0.8	29	34.4	9.2	720	7.9	15.8		9.2	2.8	4.2	0.7	5.0	1180
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							

Results

Activation Laboratories Ltd.

Report: A17-12624

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.6	66.1	15.0	97.1	132	12.1	41	9.9	318	0.2	7	4.5	0.8	95	53.3	104		41.0	5.7	4.6	0.5	2.8	6010
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	5.9	67.9	14.9	99.9	130	12.1	41	9.8	313	0.2	7	4.5	0.9	111	51.7	103		38.9	5.9	4.4	0.5	2.7	5870
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		101	23.4	< 0.1	93.4		47	< 0.1			< 1	< 0.1		621	35.8	85.1		37.0	6.8	6.4	0.9	6.0	29.8
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		97.7	21.8	< 0.1	93.8		48	< 0.1			< 1	< 0.1		644	35.4	85.8		36.3	6.9	6.3	0.9	5.9	27.1
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	1.0	125	32.9	232	72.8	11.7	71	0.1	0.32	< 0.1	< 1	0.3	< 0.1	1390	11.6	31.8		11.6	2.6	2.2	0.3	2.3	68.7
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
GXR-6 Meas	1.1	123	31.4	264	71.3	11.7	85	0.4	1.07	< 0.1	1	1.1	< 0.1	1440	11.8	32.3		12.0	2.4	2.3	0.3	2.3	68.0
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		62.2	13.2		3.3	15.3	40	1.4				0.3		100	3.4			4.5					94.5
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		61.5	12.8		3.0	14.4	38	1.5				0.4		105	3.4			4.7					96.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		194	27.7	23.9	141	30.4	127	13.2	2.82		3	1.0		609	47.6	107	11.9	47.4	8.0	7.8	1.0	6.6	32.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		194	25.8	24.2	131	29.7	130	15.8	2.67		4	1.1		565	48.1	107	11.9	47.4	8.9	8.1	1.0	6.8	29.8
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		39.0	19.6	6.3	33.7	9.8	69	0.2	0.50	< 0.1	< 1	< 0.1		179	15.4	33.2	3.5	13.5	2.4	2.4	0.3	2.3	358
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas		40.8	18.9	5.1	35.5	10.2	40	< 0.1	0.29	< 0.1	< 1	< 0.1		176	14.9	32.3	3.5	13.2	2.4	2.3	0.4	2.3	339
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		842	21.6		127	24.7	77	3.9	12.9					1000	42.2	96.6	9.8	36.3	5.9	5.5	0.7	4.8	256
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
SdAR-M2 (U.S.G.S.) Meas		775	17.8		138	24.1	124	2.8	10.8					1050	42.2	96.4	10.0	37.5	6.0	5.4	0.7	4.8	242
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
E837417 Orig	0.3	40.3	22.3	0.8	50.6	7.8	157	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	504	7.8	16.6	2.1	8.5	1.5	1.5	0.2	1.4	7.5
E837417 Dup	0.3	41.1	21.9	< 0.1	52.0	7.3	92	< 0.1	0.14	< 0.1	< 1	< 0.1	< 0.1	514	8.7	18.0	2.1	9.0	1.5	1.5	0.2	1.4	10.5
E837355 Orig	0.4	29.7	16.4	< 0.1	43.6	8.1	121	0.4	0.15	< 0.1	< 1	< 0.1	< 0.1	490	11.3	23.7	2.7	9.9	1.9	1.7	0.2	1.6	11.1
E837355 Dup	0.6	31.3	15.5	< 0.1	42.9	8.0	136	0.2	0.46	< 0.1	< 1	< 0.1	< 0.1	500	12.1	25.4	2.8	10.6	1.7	1.8	0.2	1.6	13.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837357 Orig	1.0	51.8	18.5	1.7	37.3	7.9	81	0.6	0.43	< 0.1	< 1	< 0.1	< 0.1	292	13.7	25.2	2.7	9.9	1.8	1.8	0.2	1.6	17.5	
E837357 Dup	0.7	52.8	18.4	0.4	38.0	7.4	64	< 0.1	0.26	< 0.1	< 1	< 0.1	< 0.1	330	17.5	30.4	3.1	11.3	1.6	1.8	0.2	1.5	16.2	
E837377 Orig	0.3	26.4	14.6	0.3	50.4	9.3	194	0.3	0.21	< 0.1	< 1	< 0.1	< 0.1	537	13.2	27.6	3.3	12.6	2.2	2.0	0.3	1.8	1.6	
E837377 Dup	0.4	26.7	14.8	< 0.1	50.5	9.0	152	0.3	0.13	< 0.1	< 1	< 0.1	< 0.1	540	12.2	25.4	3.0	11.9	2.0	1.9	0.3	1.7	1.7	
E837382 Orig	0.3	42.0	12.4	2.3	65.5	12.4	115	0.3	0.25	< 0.1	< 1	< 0.1	< 0.1	528	27.4	55.2	6.2	22.8	3.9	3.2	0.4	2.6	15.1	
E837382 Dup	0.4	43.8	13.0	2.6	62.8	12.0	133	4.4	0.62	< 0.1	1	< 0.1	< 0.1	517	28.8	58.4	6.5	24.4	3.5	3.3	0.4	2.5	14.7	
E821112 Orig	0.4	15.9	13.8	< 0.1	40.1	9.1	93	3.2	0.34	< 0.1	< 1	< 0.1	< 0.1	485	12.3	25.6	3.0	11.3	1.8	1.9	0.3	1.7	8.0	
E821112 Dup	0.4	16.0	13.8	< 0.1	39.4	7.9	71	2.3	0.24	< 0.1	< 1	< 0.1	< 0.1	487	10.7	22.5	2.7	10.4	2.0	1.9	0.2	1.6	< 0.2	
Method Blank	0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	10.3	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	13.0	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837417	< 0.1	0.1	0.8	0.1	< 0.1	281	< 0.1	< 0.001	0.35	15.6	3.7	1.0
E837418	< 0.1	0.1	0.8	0.1	< 0.1	322	< 0.1	< 0.001	0.29	12.9	4.1	0.8
E837419	< 0.1	0.2	1.5	0.2	< 0.1	261	0.2	< 0.001	0.67	18.3	12.1	2.4
E837420	< 0.1	0.1	0.7	< 0.1	< 0.1	230	2.2	< 0.001	1.04	34.7	51.0	2.5
E837421	< 0.1	0.2	1.1	0.1	< 0.1	281	< 0.1	< 0.001	0.54	16.5	8.3	1.4
E837422	< 0.1	0.2	1.2	0.2	< 0.1	305	0.4	0.001	0.41	15.0	9.0	1.3
E837423	< 0.1	0.1	1.0	0.1	< 0.1	293	0.3	< 0.001	0.32	17.2	8.2	1.3
E837424	< 0.1	0.1	0.9	0.1	< 0.1	260	< 0.1	< 0.001	0.35	17.2	10.5	1.4
E837425	< 0.1	0.1	0.8	0.1	0.5	231	0.6	< 0.001	0.32	15.1	3.4	0.8
E837426	< 0.1	0.1	0.9	0.1	0.2	273	0.4	< 0.001	0.32	15.9	5.5	1.0
E837427	< 0.1	0.2	1.2	0.2	< 0.1	247	< 0.1	< 0.001	0.30	18.3	8.0	2.6
E837428	< 0.1	0.3	1.8	0.2	< 0.1	265	< 0.1	< 0.001	0.45	13.5	15.7	2.8
E837429	0.1	0.2	1.1	0.2	< 0.1	255	< 0.1	< 0.001	0.27	15.4	7.4	1.2
E837430	0.1	0.2	1.2	0.2	< 0.1	107	< 0.1	< 0.001	5.73	8.5	0.7	0.2
E837431	0.2	0.2	1.3	0.2	< 0.1	237	< 0.1	< 0.001	0.33	15.1	5.4	1.4
E837432	< 0.1	0.1	1.0	0.1	< 0.1	297	< 0.1	< 0.001	0.30	13.3	5.2	1.0
E837433	< 0.1	0.1	1.0	0.1	< 0.1	271	< 0.1	< 0.001	0.32	19.9	9.9	1.6
E837434	< 0.1	0.2	1.3	0.2	0.2	260	0.1	0.001	0.27	14.3	8.7	1.4
E837435	< 0.1	0.2	1.2	0.2	< 0.1	251	< 0.1	0.003	0.44	17.9	5.0	1.5
E837436	0.2	0.1	0.9	0.1	0.3	186	0.3	0.001	0.28	16.5	5.0	0.8
E837437	< 0.1	0.1	0.8	0.1	< 0.1	290	0.3	< 0.001	0.36	19.1	15.6	1.5
E837438	< 0.1	0.1	0.9	0.1	< 0.1	260	< 0.1	< 0.001	0.31	15.4	4.5	1.0
E837439	0.2	0.1	1.0	0.1	< 0.1	283	0.1	< 0.001	0.39	15.7	4.5	1.2
E837440	< 0.1	< 0.1	0.3	< 0.1	< 0.1	198	0.4	< 0.001	0.90	29.7	41.8	1.8
E837441	< 0.1	0.2	1.2	0.2	< 0.1	315	< 0.1	< 0.001	0.22	12.3	5.3	1.1

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837442	< 0.1	0.2	1.1	0.2	< 0.1	259	< 0.1	< 0.001	0.37	15.5	7.0	1.8
E837443	< 0.1	0.2	1.3	0.2	< 0.1	267	< 0.1	< 0.001	0.39	15.0	9.6	1.6
E837444	< 0.1	0.2	1.1	0.1	< 0.1	221	< 0.1	< 0.001	0.37	17.3	11.3	2.6
E837445	< 0.1	0.1	1.0	0.1	< 0.1	306	< 0.1	< 0.001	0.36	17.3	5.4	1.6
E837446	0.2	0.1	0.8	0.1	0.6	219	0.6	< 0.001	0.37	18.9	4.9	0.9
E837447	< 0.1	0.1	0.8	0.1	< 0.1	261	< 0.1	< 0.001	0.27	13.2	4.2	0.8
E837448	< 0.1	0.1	1.0	0.1	< 0.1	280	< 0.1	< 0.001	0.46	17.6	5.0	1.2
E837449	< 0.1	0.1	0.8	0.1	< 0.1	253	< 0.1	< 0.001	0.33	14.7	4.9	1.0
E837450	< 0.1	0.2	1.2	0.2	< 0.1	111	< 0.1	< 0.001	5.77	8.5	0.7	0.2
E837351	0.2	0.1	1.0	0.1	< 0.1	275	< 0.1	< 0.001	0.35	14.1	4.8	1.2
E837352	0.2	0.1	0.8	0.1	< 0.1	325	< 0.1	< 0.001	0.38	16.0	4.1	1.0
E837353	< 0.1	0.1	0.9	0.1	< 0.1	285	< 0.1	< 0.001	0.36	16.6	14.2	1.6
E837354	0.1	0.1	0.9	0.1	< 0.1	279	< 0.1	< 0.001	0.32	14.4	6.1	1.1
E837355	0.3	0.1	0.9	0.1	< 0.1	277	< 0.1	< 0.001	0.31	14.0	5.6	1.0
E837356	< 0.1	0.2	1.0	0.1	< 0.1	235	< 0.1	< 0.001	0.39	17.8	11.6	1.7
E837357	< 0.1	0.1	0.8	0.1	< 0.1	240	< 0.1	< 0.001	0.28	14.3	5.6	1.2
E837358	< 0.1	0.1	0.9	0.1	< 0.1	305	0.3	< 0.001	0.28	14.2	3.9	0.8
E837359	< 0.1	0.1	0.9	0.1	< 0.1	309	0.2	< 0.001	0.26	14.0	5.5	0.9
E837360	< 0.1	0.2	1.1	0.2	< 0.1	238	1.0	< 0.001	0.97	40.3	66.6	4.9
E837361	< 0.1	0.2	1.0	0.1	< 0.1	301	< 0.1	0.002	0.30	13.8	5.2	1.1
E837362	< 0.1	0.1	0.9	0.1	< 0.1	275	< 0.1	< 0.001	0.31	14.2	3.7	1.0
E837363	< 0.1	0.5	3.0	0.4	< 0.1	224	< 0.1	< 0.001	0.61	19.4	16.6	2.0
E837364	< 0.1	0.2	1.5	0.2	0.3	280	0.3	< 0.001	0.29	14.1	7.2	1.4
E837365	< 0.1	0.1	0.8	0.1	< 0.1	304	0.3	< 0.001	0.25	13.8	4.4	0.8
E837366	< 0.1	0.2	1.1	0.2	< 0.1	264	< 0.1	0.001	0.42	17.4	8.1	1.3
E821060	< 0.1	0.3	1.5	0.2	< 0.1	235	< 0.1	< 0.001	1.07	42.5	111	6.6
E821061	< 0.1	0.2	1.1	0.2	< 0.1	309	0.2	< 0.001	0.30	16.9	8.9	1.6
E821062	< 0.1	0.2	1.1	0.2	< 0.1	312	< 0.1	< 0.001	0.26	12.6	11.1	1.2
E821063	< 0.1	0.1	0.9	0.1	< 0.1	253	< 0.1	< 0.001	0.41	16.6	5.5	1.3
E821064	0.3	0.2	1.1	0.2	0.6	192	0.7	< 0.001	0.55	27.2	12.2	2.0
E821065	0.3	0.1	1.0	0.2	0.1	277	0.1	< 0.001	0.44	16.6	10.9	1.6
E821066	< 0.1	0.2	1.0	0.2	< 0.1	278	< 0.1	< 0.001	0.37	15.9	6.5	1.4
E821067	< 0.1	0.2	1.0	0.1	0.4	218	0.4	< 0.001	0.50	16.1	4.7	2.2
E821068	< 0.1	0.1	1.0	0.1	< 0.1	245	< 0.1	< 0.001	0.47	16.6	6.1	1.3
E821069	< 0.1	0.4	2.4	0.4	< 0.1	222	< 0.1	< 0.001	0.15	11.8	2.7	0.9
E821070	< 0.1	0.2	1.3	0.2	< 0.1	108	< 0.1	< 0.001	5.82	8.6	0.7	0.2
E821071	< 0.1	0.1	0.7	0.1	< 0.1	317	0.1	< 0.001	0.25	13.7	4.3	0.8
E821072	0.2	0.2	1.2	0.2	< 0.1	295	< 0.1	< 0.001	0.23	13.0	4.6	1.0
E821073	0.1	0.2	1.2	0.2	< 0.1	307	< 0.1	< 0.001	0.23	14.3	10.0	1.0
E821074	0.3	0.1	0.9	0.1	0.1	306	0.1	< 0.001	0.23	13.6	4.8	0.7
E821075	0.2	0.2	1.1	0.2	0.5	307	0.4	< 0.001	0.25	13.9	7.6	1.0
E837367	< 0.1	0.3	1.8	0.2	< 0.1	212	< 0.1	< 0.001	0.59	17.6	12.4	1.6
E837368	< 0.1	0.2	1.1	0.2	< 0.1	292	< 0.1	< 0.001	0.38	14.7	6.1	1.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837369	< 0.1	0.1	0.7	< 0.1	0.4	269	0.4	< 0.001	0.34	14.3	2.4	0.6
E837370	< 0.1	0.2	1.2	0.2	< 0.1	105	< 0.1	< 0.001	5.69	8.4	0.7	0.2
E837371	< 0.1	0.2	1.1	0.2	< 0.1	222	< 0.1	< 0.001	0.62	18.3	11.7	1.6
E837372	< 0.1	0.1	0.8	0.1	< 0.1	288	< 0.1	< 0.001	0.33	16.5	6.0	1.1
E837373	< 0.1	0.2	1.3	0.2	< 0.1	223	< 0.1	< 0.001	0.48	19.1	8.3	1.7
E837374	< 0.1	0.1	0.9	0.1	0.1	266	0.5	< 0.001	0.38	19.5	9.7	1.4
E837375	< 0.1	0.1	0.7	0.1	< 0.1	287	< 0.1	< 0.001	0.30	13.7	3.7	0.8
E837376	0.2	0.1	0.9	0.1	< 0.1	310	< 0.1	< 0.001	0.23	13.5	4.4	0.9
E837377	0.2	0.2	1.0	0.2	< 0.1	299	< 0.1	< 0.001	0.31	13.8	5.1	1.1
E837378	< 0.1	0.1	1.0	0.1	< 0.1	246	< 0.1	0.001	0.45	16.5	5.9	1.2
E837379	< 0.1	0.1	0.9	0.1	< 0.1	288	< 0.1	< 0.001	0.31	13.5	4.1	0.9
E837380	< 0.1	0.2	1.1	0.2	< 0.1	218	1.3	0.001	0.92	43.5	129	4.5
E837381	< 0.1	0.3	1.7	0.2	< 0.1	264	< 0.1	< 0.001	0.55	17.5	12.9	1.6
E837382	< 0.1	0.2	1.3	0.2	< 0.1	253	< 0.1	0.001	0.44	14.3	9.4	1.4
E837383	0.2	0.2	1.2	0.2	< 0.1	311	< 0.1	< 0.001	0.23	12.2	4.6	0.9
E837384	0.2	0.1	0.9	0.1	< 0.1	305	< 0.1	< 0.001	0.25	12.6	5.4	1.0
E837385	< 0.1	0.2	1.0	0.1	0.1	265	0.1	< 0.001	0.37	16.6	6.7	1.3
E837386	< 0.1	0.1	0.9	0.1	< 0.1	286	< 0.1	< 0.001	0.37	13.9	6.2	0.9
E837387	< 0.1	0.1	0.8	0.1	< 0.1	268	< 0.1	< 0.001	0.37	13.4	4.0	0.9
E837388	< 0.1	0.1	0.9	0.1	< 0.1	279	< 0.1	< 0.001	0.38	14.1	5.7	1.1
E837389	< 0.1	0.1	0.8	< 0.1	< 0.1	315	< 0.1	< 0.001	0.28	11.8	2.8	0.7
E837390	0.1	0.2	1.2	0.2	< 0.1	106	< 0.1	< 0.001	5.69	8.4	0.7	0.2
E837391	0.2	0.1	1.0	0.1	< 0.1	261	< 0.1	< 0.001	0.34	18.9	5.6	1.3
E837392	0.3	0.2	1.1	0.1	< 0.1	240	< 0.1	0.001	0.37	16.4	6.0	2.2
E837393	0.5	0.1	0.9	0.1	0.5	222	0.7	< 0.001	0.30	18.7	5.0	1.1
E837394	0.4	0.1	0.9	0.1	0.1	241	0.3	< 0.001	0.37	14.8	4.2	1.1
E837395	0.3	0.1	0.8	0.1	< 0.1	303	< 0.1	< 0.001	0.22	12.0	2.9	0.6
E837396	< 0.1	0.1	0.8	0.1	< 0.1	299	< 0.1	< 0.001	0.22	11.8	2.6	0.6
E837397	< 0.1	0.1	0.8	0.1	0.4	248	0.4	< 0.001	0.29	12.6	2.2	0.6
E837398	< 0.1	0.2	1.1	0.2	< 0.1	278	< 0.1	< 0.001	0.32	12.0	7.3	2.8
E837399	< 0.1	0.2	1.4	0.2	< 0.1	191	< 0.1	< 0.001	0.25	12.2	10.7	1.5
E837400	< 0.1	0.3	2.1	0.3	< 0.1	226	0.4	< 0.001	1.17	41.6	119	6.5
E837459	< 0.1	0.2	1.2	0.2	< 0.1	286	< 0.1	< 0.001	0.33	12.9	6.5	1.3
E821101	< 0.1	0.2	1.1	0.2	< 0.1	259	< 0.1	< 0.001	0.24	16.6	6.7	1.5
E821102	< 0.1	0.2	1.1	0.2	< 0.1	306	< 0.1	< 0.001	0.29	13.0	7.8	1.4
E821103	0.4	< 0.1	0.6	< 0.1	0.1	333	< 0.1	< 0.001	0.26	11.6	2.8	0.6
E821104	0.3	0.2	1.1	0.1	0.4	238	1.4	< 0.001	0.29	17.5	9.1	1.5
E821105	< 0.1	0.1	0.9	0.1	< 0.1	322	< 0.1	< 0.001	0.25	11.3	2.9	1.4
E821106	< 0.1	0.2	1.0	0.2	< 0.1	282	< 0.1	< 0.001	0.37	13.8	7.9	1.2
E821107	< 0.1	0.1	0.8	0.1	0.3	291	0.3	< 0.001	0.24	12.3	3.2	0.6
E821108	< 0.1	0.1	0.7	< 0.1	< 0.1	310	< 0.1	< 0.001	0.26	12.5	6.8	0.6
E821109	< 0.1	0.2	1.6	0.2	< 0.1	239	< 0.1	< 0.001	0.55	16.9	12.8	1.7
E821110	0.2	0.2	1.2	0.2	< 0.1	107	< 0.1	< 0.001	5.74	8.4	0.6	0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821111	< 0.1	0.2	1.5	0.2	< 0.1	223	< 0.1	< 0.001	0.59	17.4	13.4	1.8
E821112	< 0.1	0.1	1.0	0.1	< 0.1	316	0.2	< 0.001	0.24	11.4	4.5	0.8
E821113	< 0.1	0.2	1.1	0.2	< 0.1	302	< 0.1	< 0.001	0.32	13.3	6.1	1.1
E821114	< 0.1	0.2	1.4	0.2	< 0.1	284	< 0.1	< 0.001	0.45	15.6	9.3	1.3
E821115	< 0.1	0.2	1.2	0.2	< 0.1	309	< 0.1	< 0.001	0.31	13.3	6.1	1.2
GXR-1 Meas		0.4	2.3	0.3	< 0.1	313	151		0.42	834	2.6	34.7
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas		0.4	2.3	0.3	< 0.1	299	152		0.42	817	3.4	45.6
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas											> 500	2600
DH-1a Cert											910	2629
DH-1a Meas											> 500	2650
DH-1a Cert											910	2629
GXR-4 Meas		0.2	1.0	0.1	0.6	216	35.4		3.34	49.2	20.6	6.0
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas		0.2	1.0	0.1	0.6	218	35.7		3.41	52.0	18.5	6.1
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas		0.5	3.2		< 0.1	184	< 0.1		0.65	25.0	11.6	2.8
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas		0.5	3.2		< 0.1	180	< 0.1		0.65	24.6	11.2	2.7
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas			1.6	0.2	< 0.1	43.6	< 0.1		2.28	104	5.4	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas			1.6	0.2	< 0.1	42.7	< 0.1		2.24	101	5.2	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas			1.9			153				6.1		
DNC-1a Cert			2.0			144				6.3		
DNC-1a Meas			1.8			151				5.9		
DNC-1a Cert			2.0			144				6.3		
SBC-1 Meas		0.5	3.4	0.5	0.5	196	1.6		0.98	37.7	16.5	6.3
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas		0.5	3.4	0.5	0.8	187	1.6		0.96	36.6	16.0	6.1
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	30.3	< 0.1		0.27	22.3	15.4	3.0
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	31.5	< 0.1		0.27	22.1	14.9	2.9
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	< 0.1	157	0.2			879	14.7	2.7
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	0.1	154	< 0.1			842	14.1	2.5
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
E837417 Orig	< 0.1	0.1	0.8	0.1	< 0.1	281	< 0.1	< 0.001	0.35	15.6	3.7	1.0
E837417 Dup	< 0.1	0.1	0.8	0.1	< 0.1	291	< 0.1	0.003	0.35	15.7	3.2	0.9
E837355 Orig	0.3	0.1	0.9	0.1	< 0.1	277	< 0.1	< 0.001	0.31	14.0	5.6	1.0
E837355 Dup	0.2	0.1	0.9	0.1	< 0.1	289	< 0.1	0.006	0.31	13.8	5.7	1.0
E837357 Orig	< 0.1	0.1	0.8	0.1	< 0.1	240	< 0.1	< 0.001	0.28	14.3	5.6	1.2
E837357 Dup	< 0.1	0.1	0.8	< 0.1	< 0.1	257	< 0.1	< 0.001	0.28	15.3	9.4	1.3
E837377 Orig	0.2	0.2	1.0	0.2	< 0.1	299	< 0.1	< 0.001	0.31	13.8	5.1	1.1
E837377 Dup	0.2	0.1	1.0	0.1	< 0.1	307	< 0.1	< 0.001	0.31	13.8	4.0	1.0
E837382 Orig	< 0.1	0.2	1.3	0.2	< 0.1	253	< 0.1	0.001	0.44	14.3	9.4	1.4
E837382 Dup	< 0.1	0.2	1.3	0.2	< 0.1	237	0.1	< 0.001	0.43	14.3	10.5	1.4
E821112 Orig	< 0.1	0.1	1.0	0.1	< 0.1	316	0.2	< 0.001	0.24	11.4	4.5	0.8
E821112 Dup	< 0.1	0.1	0.8	0.1	< 0.1	317	< 0.1	< 0.001	0.24	11.2	2.8	0.7
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.4	< 0.1	0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12625-Au  
**Invoice Date:** 24-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

103 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-12625-Au**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé".

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



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12625-Au  
**Invoice Date:** 24-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

103 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-12625-Au**

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CERTIFIED BY:



Emmanuel Esemé , Ph.D.  
Quality Control

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E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E821001	< 0.005
E821002	< 0.005
E821003	< 0.005
E821004	< 0.005
E821005	< 0.005
E821006	< 0.005
E821009	< 0.005
E821010	3.26
E821012	< 0.005
E821013	< 0.005
E821015	< 0.005
E821016	< 0.005
E821017	< 0.005
E821018	< 0.005
E821019	< 0.005
E821020	< 0.005
E821021	< 0.005
E821022	< 0.005
E821023	< 0.005
E821024	< 0.005
E821025	< 0.005
E821026	< 0.005
E821027	< 0.005
E821029	< 0.005
E821116	< 0.005
E821117	0.005
E821118	< 0.005
E821119	< 0.005
E821120	< 0.005
E821121	< 0.005
E821122	< 0.005
E821123	< 0.005
E821124	< 0.005
E821125	< 0.005
E821126	< 0.005
E821127	< 0.005
E821128	< 0.005
E821129	< 0.005
E821130	3.31
E821131	< 0.005
E821132	< 0.005
E821133	< 0.005
E821134	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E821135	< 0.005
E821136	0.037
E821137	< 0.005
E821138	< 0.005
E821139	< 0.005
E821140	< 0.005
E821141	< 0.005
E821142	< 0.005
E821143	< 0.005
E821144	< 0.005
E821145	< 0.005
E821146	< 0.005
E821147	< 0.005
E821148	< 0.005
E821149	< 0.005
E821150	3.31
E821151	0.016
E821152	< 0.005
E821153	< 0.005
E821154	0.015
E821155	0.005
E821156	< 0.005
E821157	< 0.005
E821158	< 0.005
E821159	< 0.005
E832269	< 0.005
E832270	3.30
E832271	0.005
E832272	< 0.005
E832273	< 0.005
E832274	0.015
E832275	< 0.005
E832276	< 0.005
E832277	< 0.005
E832278	< 0.005
E832279	< 0.005
E832280	< 0.005
E832281	< 0.005
E832282	< 0.005
E832283	< 0.005
E832284	< 0.005
E832285	< 0.005
E832286	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E832287	< 0.005
E832288	< 0.005
E832289	< 0.005
E832290	3.35
E832291	0.012
E832292	< 0.005
E832293	< 0.005
E832294	< 0.005
E832295	< 0.005
E832296	< 0.005
E832297	< 0.005
E832298	< 0.005
E832299	0.006
E832300	< 0.005
E821030	3.31
E821031	< 0.005
E821033	< 0.005
OREAS 220 (Fire Assay) Meas	0.890
OREAS 220 (Fire Assay) Cert	0.828
OREAS 220 (Fire Assay) Meas	0.890
OREAS 220 (Fire Assay) Cert	0.828
OREAS 220 (Fire Assay) Meas	0.872
OREAS 220 (Fire Assay) Cert	0.828
OREAS 224 (Fire Assay) Meas	2.24
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.13
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.07
OREAS 224 (Fire Assay) Cert	2.15
E821013 Orig	< 0.005
E821013 Dup	< 0.005
E821024 Orig	< 0.005
E821024 Dup	< 0.005
E821121 Orig	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E821121 Dup	< 0.005
E821139 Orig	< 0.005
E821139 Dup	< 0.005
E821151 Orig	0.016
E821151 Dup	< 0.005
E832269 Orig	< 0.005
E832269 Dup	< 0.005
E832283 Orig	< 0.005
E832283 Dup	< 0.005
E832292 Orig	< 0.005
E832292 Dup	0.005
E821031 Orig	< 0.005
E821031 Dup	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12625-UT4  
**Invoice Date:** 28-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

103 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-12625-UT4**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Date Submitted: 08-Nov-17  
Invoice No.: A17-12625-UT4  
Invoice Date: 28-Dec-17  
Your Reference: Exploration

GOLDCORP Canada Ltd--Musselwhite Mine  
P.O. Box 7500  
Thunder bay Ontario P7B 6S8  
Canada

ATTN: Katie Lucas

## CERTIFICATE OF ANALYSIS

103 Soil samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-4 Total Digestion ICP/MS

REPORT **A17-12625-UT4**

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Notes:

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Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



---

Elitsa Hrischeva, Ph.D.  
Quality Control

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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

## Results

## Activation Laboratories Ltd.

## Report: A17-12625

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E821001	< 1	4.7	1.38	0.37	4.35	0.82	1.85	0.1	48	68.3	217	2.69	1.6	12.6	0.7	0.9	0.3	70	< 0.05	0.63	3.5	0.36	0.14
E821002	< 1	17.1	2.23	0.78	6.51	1.86	2.10	< 0.1	42	60.5	393	2.25	2.2	22.2	1.2	1.1	0.4	80	< 0.05	1.50	8.2	0.73	0.11
E821003	< 1	20.4	1.53	0.80	5.92	1.71	2.30	0.2	50	70.3	388	2.35	0.7	28.7	1.2	1.4	0.4	70	< 0.05	2.15	9.5	0.73	0.13
E821004	< 1	17.1	2.23	1.04	6.31	1.80	2.31	< 0.1	46	67.2	474	2.21	0.5	24.6	1.3	1.3	0.4	50	< 0.05	1.53	9.0	0.77	0.11
E821005	< 1	1.5	0.07	0.15	1.73	0.12	3.43	1.2	27	31.5	7200	2.46	< 0.1	22.7	1.6	0.4	0.5	120	0.11	0.57	20.3	0.94	0.10
E821006	< 1	2.4	0.41	0.31	1.61	0.33	3.90	0.4	18	32.1	314	1.00	0.3	12.9	0.5	0.4	0.2	60	< 0.05	0.56	2.9	0.27	0.05
E821009	< 1	2.5	0.28	0.33	1.27	0.31	3.46	0.2	19	44.5	1200	2.55	< 0.1	19.8	0.5	0.3	0.2	30	< 0.05	1.16	4.5	0.26	0.07
E821010	< 1	5.8	1.34	1.28	4.97	2.22	2.71	< 0.1	37	56.6	535	3.60	0.6	25.8	1.4	0.9	0.5	50	1.05	17.1	17.1	0.59	0.86
E821012	5	12.6	1.80	0.69	5.03	1.32	2.51	0.2	43	72.4	1110	2.15	3.5	24.2	1.1	0.9	0.4	60	< 0.05	1.04	8.4	0.66	0.09
E821013	8	0.9	0.05	0.33	0.35	0.08	5.53	0.3	2	44.9	184	0.18	< 0.1	3.0	0.1	< 0.1	< 0.1	120	< 0.05	0.43	0.8	0.06	0.03
E821015	8	1.0	0.06	0.35	0.48	0.09	5.50	0.4	9	15.3	334	0.33	< 0.1	12.7	0.4	0.2	0.1	110	< 0.05	0.40	1.7	0.16	0.04
E821016	< 1	8.6	1.74	0.38	4.72	1.20	2.49	0.3	23	37.8	810	0.91	0.4	16.4	0.7	0.9	0.3	70	< 0.05	0.63	3.8	0.44	0.04
E821017	< 1	0.6	0.03	0.27	0.30	0.05	4.92	0.2	5	10.6	501	0.38	< 0.1	6.1	0.2	< 0.1	< 0.1	70	< 0.05	0.17	1.5	0.08	0.03
E821018	< 1	0.8	0.05	0.30	0.26	0.05	4.70	0.4	32	9.9	99	0.19	< 0.1	12.9	0.2	0.2	< 0.1	70	< 0.05	0.23	0.9	0.07	0.02
E821019	< 1	5.2	0.35	0.41	1.42	0.36	5.39	0.4	17	23.5	551	0.83	< 0.1	9.1	0.5	0.5	0.2	10	0.09	0.67	4.3	0.25	0.06
E821020	< 1	20.1	2.31	0.37	6.31	4.30	1.05	< 0.1	27	23.4	375	2.93	9.1	6.1	1.1	1.1	0.4	20	< 0.05	1.28	5.2	0.65	< 0.02
E821021	< 1	13.6	0.76	0.59	3.23	1.00	3.90	0.3	31	42.1	998	1.30	1.3	13.4	0.6	0.7	0.2	20	0.27	1.71	6.2	0.34	0.11
E821022	< 1	14.0	1.87	0.68	5.95	1.68	2.01	< 0.1	36	49.3	319	1.78	1.0	20.9	1.0	1.1	0.3	50	< 0.05	1.54	6.5	0.60	0.09
E821023	9	17.0	1.62	2.24	5.26	1.63	7.74	< 0.1	42	62.0	386	1.95	3.5	20.5	1.1	1.2	0.4	60	< 0.05	1.37	7.3	0.66	0.09
E821024	6	0.9	0.04	0.35	0.32	0.08	5.77	0.3	3	7.8	272	0.19	< 0.1	5.7	0.1	< 0.1	< 0.1	120	0.07	0.32	0.8	0.06	0.03
E821025	< 1	16.0	1.96	0.65	5.79	1.74	1.88	< 0.1	40	50.0	328	1.88	3.5	20.6	1.1	1.1	0.4	70	< 0.05	1.33	6.8	0.68	0.09
E821026	< 1	13.6	2.22	0.64	6.07	1.74	2.09	0.1	36	47.3	308	1.56	0.1	20.2	1.1	1.2	0.4	60	< 0.05	1.17	6.5	0.69	0.10
E821027	< 1	18.3	1.41	0.75	5.14	1.69	3.13	0.3	44	56.2	441	1.87	0.3	23.1	1.4	1.3	0.5	70	< 0.05	1.97	7.4	0.76	0.14
E821029	< 1	0.8	0.05	0.31	0.38	0.08	4.50	0.2	3	7.2	77	0.17	< 0.1	3.5	0.2	0.2	< 0.1	70	< 0.05	0.21	0.4	0.11	0.03
E821116	< 1	17.8	2.00	1.49	6.45	1.90	2.73	< 0.1	38	61.3	429	2.41	3.4	27.0	1.4	1.3	0.5	40	< 0.05	1.54	8.5	0.88	0.12
E821117	< 1	32.6	1.68	1.64	7.23	2.39	3.39	< 0.1	60	69.2	613	3.13	3.4	39.2	1.6	1.6	0.5	20	< 0.05	3.00	13.8	0.90	0.17
E821118	< 1	13.8	2.21	0.61	6.11	1.63	1.68	< 0.1	32	59.3	296	1.71	3.5	16.3	0.9	1.2	0.3	< 10	< 0.05	1.19	6.0	0.52	0.09
E821119	< 1	28.7	1.74	2.17	6.90	2.12	4.37	0.1	56	57.2	687	2.83	3.5	35.4	1.6	1.5	0.5	10	< 0.05	2.49	12.4	0.89	0.16
E821120	< 1	20.6	2.68	0.30	7.24	4.25	0.97	< 0.1	19	21.5	352	2.70	3.5	6.2	0.5	1.0	0.2	30	< 0.05	1.88	4.0	0.58	0.02
E821121	8	26.6	1.93	0.95	7.29	2.32	1.62	< 0.1	54	72.9	569	2.90	3.7	31.7	1.4	1.4	0.5	60	< 0.05	2.24	11.7	0.75	0.15
E821122	< 1	19.3	2.15	1.04	6.46	2.04	2.15	< 0.1	47	56.6	454	2.44	3.7	26.1	1.3	1.2	0.4	60	< 0.05	1.50	9.3	0.81	0.11
E821123	< 1	28.8	1.90	1.16	7.26	2.27	2.24	< 0.1	57	63.1	473	2.90	0.6	32.0	1.5	1.5	0.5	60	< 0.05	2.42	10.7	0.85	0.16
E821124	< 1	11.2	2.18	0.56	6.23	1.64	1.77	< 0.1	34	45.2	273	1.72	0.5	17.0	0.9	1.2	0.3	40	< 0.05	0.84	6.5	0.57	0.07
E821125	< 1	32.5	1.83	0.92	6.93	2.21	1.82	0.2	34	64.4	440	2.75	3.0	28.1	1.4	1.4	0.5	30	< 0.05	2.33	10.5	0.78	0.16
E821126	< 1	8.5	2.45	0.65	6.30	1.55	1.98	< 0.1	42	63.3	352	2.09	4.3	17.6	1.1	1.2	0.4	30	< 0.05	0.52	6.3	0.70	0.07
E821127	< 1	9.2	2.38	0.59	6.23	1.47	1.90	< 0.1	32	48.0	285	1.54	2.4	15.8	0.9	1.0	0.3	20	< 0.05	0.63	5.4	0.60	0.07
E821128	< 1	25.0	2.12	0.90	6.78	1.66	1.76	< 0.1	51	79.6	349	3.36	3.9	34.9	0.9	1.0	0.3	40	< 0.05	1.80	9.4	0.53	0.20
E821129	3	25.3	2.21	0.83	5.98	1.56	1.63	< 0.1	56	105	353	3.17	3.6	34.7	0.7	1.0	0.3	80	< 0.05	1.77	9.4	0.40	0.14
E821130	< 1	5.9	1.51	1.40	5.83	2.56	2.87	< 0.1	54	81.6	615	3.77	1.1	27.3	1.4	1.0	0.5	50	1.05	17.2	17.6	0.60	0.74
E821131	< 1	48.2	1.71	0.75	7.40	1.13	1.59	< 0.1	79	55.5	375	5.71	2.8	25.0	0.8	1.2	0.3	110	< 0.05	3.41	9.6	0.45	0.26
E821132	< 1	27.0	1.99	0.79	7.21	1.49	1.58	< 0.1	68	69.1	334	4.75	2.1	31.5	0.9	1.2	0.3	80	< 0.05	2.33	10.0	0.47	0.18
E821133	< 1	35.6	2.68	1.00	8.10	1.22	2.06	< 0.1	39	43.8	562	4.47	3.7	20.0	0.9	1.1	0.3	50	< 0.05	3.90	12.7	0.52	1.38
E821134	< 1	116	1.86	1.05	7.87	1.15	2.09	< 0.1	31	53.0	458	3.60	3.1	43.1	1.0	1.0	0.3	40	< 0.05	4.70	13.3	0.32	0.38



## Results

## Activation Laboratories Ltd.

## Report: A17-12625

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E821135	< 1	65.3	1.88	2.09	8.18	0.59	3.39	< 0.1	74	106	862	6.47	3.1	59.3	2.1	0.8	0.7	20	< 0.05	2.69	23.4	0.56	0.30
E821136	< 1	10.4	2.45	0.62	6.31	1.54	1.89	< 0.1	42	61.3	365	2.05	3.4	18.1	0.9	1.2	0.3	10	< 0.05	0.60	6.3	0.59	0.08
E821137	< 1	8.4	2.19	0.56	6.38	1.40	1.83	< 0.1	37	57.6	315	1.80	3.1	18.5	1.1	1.2	0.4	10	< 0.05	0.52	5.9	0.74	0.06
E821138	< 1	7.6	2.39	0.56	6.38	1.53	1.90	< 0.1	34	56.4	335	1.71	3.2	14.4	0.9	1.1	0.3	< 10	< 0.05	0.56	4.9	0.56	0.06
E821139	< 1	21.0	2.20	0.79	6.75	1.53	1.95	< 0.1	34	55.8	415	2.62	2.8	24.8	1.0	1.1	0.3	20	< 0.05	1.24	8.8	0.62	0.08
E821140	< 1	20.3	2.36	0.23	4.94	2.28	1.02	< 0.1	19	28.3	374	2.73	7.3	3.2	0.5	1.0	0.2	50	< 0.05	1.65	3.8	0.30	0.02
E821141	3	23.0	2.55	0.74	8.22	1.55	1.94	< 0.1	49	51.7	342	2.91	1.8	25.3	0.9	1.3	0.3	60	< 0.05	1.12	9.2	0.63	0.10
E821142	< 1	16.1	2.81	0.79	8.27	1.87	2.16	< 0.1	54	64.7	398	2.78	3.3	23.5	0.8	1.4	0.3	40	< 0.05	0.90	8.5	0.58	0.08
E821143	< 1	11.7	2.16	0.84	6.67	1.24	2.20	< 0.1	58	98.1	517	3.18	5.5	25.8	1.4	1.4	0.5	50	< 0.05	0.64	9.3	0.77	0.10
E821144	< 1	13.0	2.03	0.88	6.76	1.24	2.12	0.1	64	127	546	4.14	0.9	28.6	1.4	1.3	0.5	50	< 0.05	0.94	10.3	0.78	0.11
E821145	< 1	16.6	2.43	0.57	8.06	1.57	1.79	< 0.1	48	66.3	269	2.54	3.4	21.6	0.7	1.4	0.2	40	< 0.05	1.34	7.2	0.52	0.10
E821146	< 1	12.9	2.19	0.88	6.80	1.27	2.11	< 0.1	67	130	511	3.74	5.7	30.5	1.3	1.3	0.4	30	< 0.05	1.07	9.7	0.75	0.12
E821147	< 1	29.1	2.20	0.51	6.98	1.25	1.53	0.1	64	159	241	3.55	2.4	19.9	0.5	1.4	0.2	20	< 0.05	2.70	6.9	0.35	0.27
E821148	< 1	50.0	2.20	1.03	7.47	1.31	1.85	< 0.1	90	85.9	426	5.08	3.5	41.9	0.9	1.2	0.3	< 10	< 0.05	3.76	14.3	0.48	0.27
E821149	< 1	25.7	1.70	0.59	6.41	1.51	1.24	< 0.1	55	58.7	268	3.47	3.6	24.4	0.8	0.9	0.3	10	< 0.05	2.63	7.5	0.47	0.18
E821150	< 1	6.0	1.33	1.40	5.60	2.53	2.83	0.1	69	68.9	574	3.56	1.3	26.0	1.5	1.1	0.5	10	1.08	17.8	16.6	0.59	0.78
E821151	2	25.2	> 3.00	0.81	6.68	1.33	2.32	< 0.1	70	70.8	383	2.81	3.5	24.5	0.7	1.3	0.2	50	< 0.05	3.28	8.8	0.36	0.18
E821152	< 1	16.8	2.20	0.75	6.32	1.75	1.71	< 0.1	44	54.7	320	2.11	4.2	22.7	1.0	1.1	0.3	60	< 0.05	2.57	7.2	0.56	0.12
E821153	< 1	33.6	1.73	0.85	6.67	1.71	1.50	< 0.1	57	56.2	340	3.36	1.2	42.8	0.9	1.1	0.3	50	< 0.05	2.94	10.3	0.51	0.18
E821154	< 1	17.4	> 3.00	0.53	8.17	1.80	1.92	< 0.1	22	29.9	205	2.11	1.7	17.4	0.6	1.4	0.2	40	< 0.05	2.93	5.3	0.44	0.18
E821155	< 1	25.2	2.68	0.96	7.93	1.70	2.10	< 0.1	59	70.8	385	4.00	2.0	32.7	0.9	1.4	0.3	30	< 0.05	2.53	10.5	0.55	0.21
E821156	< 1	16.6	2.09	0.77	6.09	1.27	1.91	< 0.1	74	105	478	3.91	4.6	26.4	1.2	1.4	0.4	10	< 0.05	1.16	9.9	0.63	0.11
E821157	< 1	21.0	2.45	0.53	4.64	1.28	1.69	0.1	58	84.9	335	2.91	3.1	26.7	0.6	1.4	0.2	< 10	< 0.05	1.00	9.0	0.33	0.10
E821158	< 1	19.9	> 3.00	0.57	7.93	1.69	1.89	0.1	46	55.2	257	2.40	2.4	23.1	0.6	1.6	0.2	20	< 0.05	1.25	8.0	0.40	0.09
E821159	< 1	20.4	2.73	0.66	8.11	1.62	1.82	< 0.1	54	52.7	313	3.24	2.7	25.9	0.7	1.3	0.2	20	< 0.05	1.31	8.6	0.46	0.11
E832269	< 1	41.1	1.50	0.96	6.17	1.77	2.04	0.1	54	65.4	271	2.37	3.2	35.2	1.4	1.4	0.5	80	< 0.05	3.32	9.7	0.80	0.16
E832270	< 1	6.1	1.40	1.39	5.79	2.39	2.79	< 0.1	61	78.2	571	3.71	1.1	27.1	1.4	1.0	0.5	60	1.09	17.7	17.1	0.59	0.65
E832271	< 1	25.2	1.55	0.87	6.11	1.70	1.77	0.1	55	72.8	319	2.31	1.2	31.2	1.3	1.2	0.4	60	< 0.05	2.42	9.3	0.71	0.14
E832272	< 1	32.5	1.55	0.95	6.40	1.81	1.72	0.2	54	75.7	340	2.84	2.0	34.9	1.5	1.4	0.5	200	< 0.05	2.97	10.4	0.83	0.19
E832273	< 1	27.1	1.58	0.83	5.99	1.77	1.57	0.1	49	73.5	284	2.04	3.2	29.7	1.3	1.4	0.4	40	< 0.05	3.99	7.8	0.72	0.12
E832274	< 1	2.4	0.06	0.20	0.79	0.17	3.30	0.3	18	22.4	173	0.85	0.5	15.6	0.6	0.3	0.2	40	< 0.05	0.98	1.0	0.21	0.04
E832275	< 1	6.3	0.14	0.33	1.84	0.25	4.71	0.3	23	32.4	332	1.56	< 0.1	42.2	1.9	0.7	0.7	60	0.14	1.34	3.9	1.39	0.10
E832276	< 1	3.6	0.25	0.20	1.42	0.29	2.30	0.5	21	43.0	900	1.51	< 0.1	28.6	0.7	0.4	0.3	60	< 0.05	2.65	3.1	0.36	0.08
E832277	< 1	10.4	1.74	0.38	4.67	1.28	1.97	0.2	28	39.0	351	1.31	0.3	23.0	0.9	0.9	0.3	80	< 0.05	2.36	6.2	0.57	0.07
E832278	12	23.3	1.65	0.76	5.08	1.49	1.73	0.2	48	77.1	247	1.86	3.2	29.9	1.0	1.2	0.3	70	< 0.05	2.30	7.3	0.52	0.12
E832279	13	12.1	1.20	0.72	3.95	1.11	3.51	0.5	39	59.9	297	1.82	0.6	31.2	1.0	0.9	0.4	100	< 0.05	1.34	6.9	0.54	0.09
E832280	< 1	20.8	2.30	0.30	7.03	2.96	0.99	< 0.1	19	21.5	366	2.88	3.8	3.6	0.6	1.0	0.2	40	< 0.05	1.76	4.0	0.58	0.02
E832281	< 1	2.5	0.06	0.36	0.89	0.14	6.20	0.7	22	19.1	294	0.69	< 0.1	40.0	0.7	0.3	0.2	90	0.19	0.76	9.6	0.32	0.06
E832282	< 1	14.0	1.62	0.63	4.97	1.29	2.29	0.2	49	66.0	535	1.94	0.3	30.3	1.3	1.1	0.4	60	< 0.05	2.40	7.5	0.75	0.10
E832283	< 1	9.2	1.99	0.53	5.23	1.50	2.36	0.2	35	54.0	286	1.39	1.2	24.1	0.9	1.0	0.3	50	< 0.05	1.01	5.6	0.58	0.07
E832284	< 1	20.2	1.77	0.74	6.32	1.72	1.93	0.2	49	67.9	399	2.16	3.4	28.1	1.1	1.2	0.4	40	< 0.05	2.33	9.5	0.68	0.12
E832285	< 1	3.7	0.50	0.27	1.92	0.43	4.14	0.2	18	26.7	286	0.76	0.3	14.9	0.5	0.5	0.2	10	< 0.05	0.65	3.0	0.28	0.08
E832286	< 1	6.8	0.30	0.28	2.08	0.43	2.81	0.5	45	46.8	7430	6.49	< 0.1	19.1	0.9	0.7	0.3	20	0.08	1.19	31.7	0.49	0.14

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832287	< 1	9.9	0.43	0.38	2.43	0.57	2.36	1.0	73	47.9	> 10000	7.89	< 0.1	26.1	0.9	0.7	0.3	30	0.09	1.38	48.7	0.51	0.15
E832288	5	2.4	0.29	0.29	1.15	0.24	4.05	0.3	13	16.7	981	0.53	0.6	10.8	0.3	0.3	0.1	120	< 0.05	0.36	2.5	0.14	0.05
E832289	8	14.3	0.29	0.50	2.38	0.73	4.19	0.4	33	34.0	325	1.22	< 0.1	18.4	0.8	0.8	0.3	120	< 0.05	1.64	4.4	0.45	0.11
E832290	< 1	5.9	1.37	1.27	5.52	2.36	2.82	< 0.1	77	75.9	557	3.60	1.3	27.1	1.4	1.0	0.5	40	1.01	17.0	16.7	0.59	0.75
E832291	2	0.6	0.03	0.19	0.53	0.05	3.31	0.3	8	11.7	194	0.73	< 0.1	8.9	0.5	0.2	0.2	120	< 0.05	0.29	1.9	0.36	0.07
E832292	1	0.9	0.04	0.27	0.42	0.08	3.80	0.2	5	11.0	1030	0.58	0.1	4.1	0.2	< 0.1	< 0.1	90	< 0.05	0.39	2.4	0.10	0.03
E832293	< 1	0.7	0.02	0.18	0.27	0.05	3.72	0.2	2	8.3	247	0.23	< 0.1	2.7	< 0.1	< 0.1	< 0.1	60	< 0.05	0.12	0.6	< 0.05	0.02
E832294	< 1	20.9	0.29	0.49	3.17	0.43	4.00	0.4	43	59.4	295	1.83	0.4	41.3	3.2	1.2	1.2	40	< 0.05	2.42	8.9	2.25	0.24
E832295	< 1	3.1	0.10	0.20	1.32	0.20	3.86	0.4	14	27.7	1100	0.73	< 0.1	19.6	1.0	0.4	0.3	30	0.16	1.15	5.5	0.57	0.13
E832296	< 1	1.4	0.06	0.16	0.85	0.09	2.18	0.4	8	24.5	1020	2.31	0.1	16.3	0.7	0.2	0.2	10	< 0.05	0.61	4.8	0.44	0.07
E832297	< 1	2.5	0.40	0.29	1.71	0.33	3.15	0.3	24	29.9	952	2.06	0.1	25.6	0.6	0.4	0.2	10	< 0.05	0.99	4.5	0.31	0.07
E832298	< 1	0.9	0.06	0.11	0.74	0.08	2.95	0.4	16	25.4	1430	2.05	0.1	15.4	0.5	0.1	0.1	10	< 0.05	0.35	2.3	0.18	0.06
E832299	< 1	2.3	0.15	0.32	1.75	0.16	3.99	0.7	10	21.9	94	1.11	0.8	25.9	1.4	0.7	0.5	130	< 0.05	0.63	2.3	0.86	0.08
E832300	< 1	19.7	2.27	0.27	7.42	2.88	1.10	< 0.1	21	62.7	282	2.40	0.1	7.1	1.1	0.8	0.4	60	< 0.05	1.36	5.7	0.80	0.05
E821030	< 1	6.1	1.40	1.29	5.42	2.35	2.86	< 0.1	71	75.1	569	3.64	1.2	27.7	1.3	1.0	0.5	40	1.02	16.8	16.7	0.58	0.83
E821031	< 1	29.3	0.24	0.40	3.45	0.51	1.46	0.5	26	51.6	250	1.90	< 0.1	35.0	3.6	1.1	1.4	150	0.19	8.11	10.0	2.52	0.65
E821033	< 1	4.9	0.07	0.17	2.10	0.17	2.73	0.3	11	19.1	205	1.06	< 0.1	30.0	1.4	0.8	0.5	120	0.14	1.63	3.4	0.70	0.10
GXR-1 Meas	< 1	8.3	0.04	0.20	2.01	0.04	0.83	2.7	75	12.4	944	24.3	0.4	37.0		1.1		3590	30.7	2.69	7.7	0.56	1400
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
GXR-1 Meas	< 1	8.0	0.04	0.20	2.06	0.04	0.79	2.8	77	16.2	926	26.2	0.5	38.0		1.0		2980	32.0	2.80	8.7	0.56	1360
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	10.6	0.48	1.75	6.32	3.71	0.90	0.3	80	39.4	141	2.98	1.3	35.9		2.0		110	3.29	2.36	13.5	1.22	17.0
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
GXR-4 Meas	< 1	10.8	0.44	1.60	6.23	3.83	0.94	0.3	83	40.2	155	3.07	1.2	36.7		1.9		230	3.21	2.26	13.8	1.23	17.3
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	35.7	1.61	1.09	8.08	2.27	1.02		57	65.6	953	5.27	1.2	34.8	3.4	3.1	1.2	60		3.54	19.1	1.35	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	< 1	34.5	1.59	1.08	8.31	2.23	0.97		54	58.6	918	5.03	1.2	34.5	3.4	2.7	1.1	70		3.74	19.2	1.29	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	37.3	0.10	0.73	> 10.0	1.89	0.19	0.1	113	47.1	1100	6.35	1.9	26.0		1.2		100	0.14	3.62	15.0	0.58	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
GXR-6 Meas	< 1	36.3	0.10	0.66	> 10.0	1.96	0.18	< 0.1	135	55.1	1110	5.92	2.3	24.2		1.2		70	0.13	3.78	14.1	0.54	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.7							142	183				266							62.3	0.49	
DNC-1a Cert		5.2							148	270				247							57	0.59	
DNC-1a Meas		4.6							139	164				263							59.8	0.49	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		170						0.4	243	79.9			3.2	88.9	3.6	3.4	1.2			7.51	24.5	1.71	0.66
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
SBC-1 Meas		164						0.4	237	92.9			3.6	87.7	3.8	3.3	1.2			7.82	25.5	1.69	0.64
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.4	0.08	0.24	7.35	0.42	0.17		104	554	515	15.5	1.8	224	1.3	0.7	0.4			3.36	31.9	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		21.1	0.08	0.22	7.43	0.41	0.18		72	467	506	14.4	1.0	218	1.3	0.7	0.4			3.27	29.8	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		19.3						5.7	23	45.4			1.2	55.4	2.9	7.4	0.9	1150		1.62	15.6	1.20	1.03
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		17.4						5.7	21	37.2			3.8	48.7	2.8	6.7	0.9	1010		1.72	14.3	1.17	0.99
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
E821009 Orig	< 1	2.5	0.28	0.33	1.27	0.31	3.46	0.2	19	44.5	1200	2.55	< 0.1	19.8	0.5	0.3	0.2	30	< 0.05	1.16	4.5	0.26	0.07
E821009 Dup	< 1	2.5	0.26	0.31	1.15	0.29	3.26	0.2	19	23.7	1140	2.49	< 0.1	19.2	0.5	0.2	0.2	50	< 0.05	1.15	4.3	0.25	0.07
E821012 Orig	5	12.6	1.80	0.69	5.03	1.32	2.51	0.2	43	72.4	1110	2.15	3.5	24.2	1.1	0.9	0.4	60	< 0.05	1.04	8.4	0.66	0.09
E821012 Dup	6	12.8	1.70	0.70	5.30	1.35	2.49	0.1	43	69.3	1180	2.26	3.0	24.1	1.1	1.2	0.4	60	< 0.05	1.06	8.6	0.69	0.10
E821127 Orig	< 1	9.2	2.38	0.59	6.23	1.47	1.90	< 0.1	32	48.0	285	1.54	2.4	15.8	0.9	1.0	0.3	20	< 0.05	0.63	5.4	0.60	0.07
E821127 Dup	< 1	9.9	2.40	0.62	6.10	1.47	1.94	< 0.1	32	43.5	275	1.61	2.5	16.3	0.8	1.1	0.3	40	< 0.05	0.68	5.5	0.59	0.07
E821152 Orig	< 1	16.8	2.20	0.75	6.32	1.75	1.71	< 0.1	44	54.7	320	2.11	4.2	22.7	1.0	1.1	0.3	60	< 0.05	2.57	7.2	0.56	0.12
E821152 Dup	< 1	17.1	2.34	0.74	6.49	1.63	1.78	< 0.1	45	59.4	356	2.19	4.7	23.6	1.1	1.1	0.3	50	< 0.05	2.47	7.5	0.57	0.11
E832279 Orig	13	12.1	1.20	0.72	3.95	1.11	3.51	0.5	39	59.9	297	1.82	0.6	31.2	1.0	0.9	0.4	100	< 0.05	1.34	6.9	0.54	0.09
E832279 Dup	2	12.3	1.19	0.70	4.17	1.14	3.52	0.4	40	56.1	298	1.79	0.6	30.2	1.1	0.8	0.3	100	< 0.05	1.32	6.7	0.53	0.10
E832299 Orig	< 1	2.3	0.15	0.32	1.75	0.16	3.99	0.7	10	21.9	94	1.11	0.8	25.9	1.4	0.7	0.5	130	< 0.05	0.63	2.3	0.86	0.08
E832299 Dup	< 1	2.4	0.15	0.32	1.79	0.16	4.08	0.8	11	25.7	100	1.13	< 0.1	24.7	1.5	0.7	0.5	130	< 0.05	0.63	2.6	0.88	0.07
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	9.8	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	10	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	6.1	9	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	4	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.9	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	8.6	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821001	0.7	9.8	12.2	3.7	22.3	6.9	89	0.3	0.33	< 0.1	< 1	< 0.1	< 0.1	293	10.6	21.1	2.2	8.2	1.4	1.3	0.2	1.2	6.8
E821002	0.4	33.2	14.5	4.2	57.2	11.1	123	0.2	0.26	< 0.1	< 1	< 0.1	< 0.1	521	23.6	48.5	5.5	20.1	3.3	2.8	0.4	2.3	6.3
E821003	0.5	46.6	13.6	1.8	62.3	11.6	60	2.1	0.44	< 0.1	< 1	< 0.1	< 0.1	506	26.6	54.0	5.9	22.0	3.3	3.1	0.4	2.3	15.6
E821004	0.4	35.3	14.3	1.3	56.2	11.5	57	0.4	0.35	< 0.1	< 1	< 0.1	< 0.1	544	26.1	52.5	5.8	21.6	3.4	2.9	0.3	2.2	8.3

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821005	2.8	9.0	2.9	20.6	5.5	16.5	4	1.5	4.62	< 0.1	< 1	0.3	< 0.1	232	56.7	118	11.1	40.3	5.2	4.6	0.5	3.1	34.2
E821006	1.7	18.3	3.9	2.8	10.7	4.6	20	1.8	1.27	< 0.1	< 1	0.2	< 0.1	173	8.2	15.7	1.9	7.2	1.1	1.1	0.1	0.9	10.4
E821009	1.2	17.6	3.3	78.8	11.9	4.2	2	1.3	1.23	< 0.1	< 1	0.2	< 0.1	168	9.6	17.9	2.2	8.1	1.3	1.1	0.1	0.8	8.5
E821010	0.3	48.1	13.4	4.4	570	12.6	21	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	57	3.8	9.2	1.3	6.3	1.7	2.3	0.4	2.5	34.5
E821012	0.6	24.3	11.3	0.2	38.3	10.9	149	6.9	0.84	< 0.1	< 1	0.1	< 0.1	462	24.3	49.2	5.3	19.5	3.0	2.9	0.3	2.2	8.5
E821013	1.2	15.1	1.3	< 0.1	3.1	1.3	1	0.5	1.10	< 0.1	< 1	0.1	< 0.1	131	2.0	3.9	0.5	1.8	0.2	0.3	< 0.1	0.2	5.3
E821015	3.1	7.5	2.0	0.7	2.9	3.5	< 1	0.5	0.88	< 0.1	< 1	0.3	< 0.1	142	9.8	9.4	2.0	7.0	1.0	0.8	0.1	0.6	37.5
E821016	1.1	19.0	10.5	< 0.1	33.0	7.2	29	1.4	1.55	< 0.1	< 1	< 0.1	< 0.1	470	12.0	23.0	2.7	10.8	1.4	1.6	0.2	1.3	6.8
E821017	1.2	3.7	1.0	< 0.1	1.9	1.6	2	0.5	2.17	< 0.1	< 1	0.1	< 0.1	100	3.0	4.6	0.7	2.6	0.4	0.4	< 0.1	0.3	6.4
E821018	1.7	3.4	0.8	< 0.1	1.7	1.7	1	0.4	3.74	< 0.1	< 1	0.3	< 0.1	107	2.6	3.8	0.6	2.2	0.5	0.3	< 0.1	0.3	34.6
E821019	1.8	13.7	3.5	< 0.1	14.0	4.6	5	0.9	0.69	< 0.1	< 1	0.2	< 0.1	199	9.2	15.6	2.1	7.9	1.1	1.1	0.1	0.9	16.2
E821020	0.3	53.5	17.7	5.3	150	9.8	349	11.3	2.29	< 0.1	1	0.1	< 0.1	961	62.6	142	14.8	52.9	6.9	4.9	0.4	2.4	7.7
E821021	0.8	43.6	7.5	0.6	44.9	5.5	59	3.4	1.33	< 0.1	< 1	0.2	< 0.1	345	12.9	24.6	2.7	10.2	1.8	1.5	0.2	1.2	11.1
E821022	0.5	33.4	13.5	1.1	53.9	8.7	76	1.2	0.28	< 0.1	< 1	< 0.1	< 0.1	524	17.7	35.9	4.1	15.4	2.5	2.1	0.3	1.7	7.7
E821023	0.3	32.8	11.4	0.4	48.8	9.9	139	7.6	0.43	< 0.1	< 1	0.2	< 0.1	479	21.5	42.9	4.9	18.6	3.0	2.6	0.3	2.1	9.6
E821024	1.3	26.9	1.4	< 0.1	2.9	1.4	1	0.4	1.47	< 0.1	< 1	0.2	< 0.1	142	2.4	4.1	0.5	2.1	0.4	0.3	< 0.1	0.3	10.1
E821025	0.4	32.1	13.3	< 0.1	51.6	10.6	141	1.5	0.27	< 0.1	< 1	< 0.1	< 0.1	529	23.6	44.0	5.2	19.6	2.9	2.8	0.3	2.1	7.6
E821026	0.5	31.4	13.2	< 0.1	48.0	10.3	16	1.3	0.68	< 0.1	< 1	< 0.1	< 0.1	515	22.0	42.4	4.8	18.4	2.8	2.6	0.3	1.9	8.1
E821027	0.8	40.7	12.2	< 0.1	56.7	12.6	33	1.4	0.35	< 0.1	< 1	< 0.1	< 0.1	475	28.2	54.5	6.3	23.2	3.5	3.2	0.4	2.5	14.9
E821029	1.1	16.0	1.1	< 0.1	2.9	2.1	< 1	0.3	1.07	< 0.1	< 1	0.3	< 0.1	76	5.8	10.8	1.2	4.2	0.4	0.6	< 0.1	0.4	1.9
E821116	0.3	30.2	14.6	0.8	60.0	13.1	146	0.2	0.15	< 0.1	< 1	< 0.1	< 0.1	573	29.5	53.3	6.6	24.5	3.8	3.4	0.4	2.8	9.0
E821117	0.4	54.3	16.3	1.1	82.1	13.8	129	3.7	0.33	< 0.1	1	< 0.1	< 0.1	615	32.4	72.1	7.4	26.8	4.5	3.7	0.4	3.0	19.3
E821118	0.5	28.7	13.0	< 0.1	44.9	7.3	150	2.1	0.19	< 0.1	< 1	< 0.1	< 0.1	540	12.6	25.7	3.1	11.6	2.0	1.8	0.2	1.4	0.4
E821119	0.5	54.0	15.2	1.0	71.1	13.9	137	1.5	0.23	< 0.1	< 1	< 0.1	< 0.1	584	33.4	67.4	7.4	26.9	4.4	3.6	0.4	2.9	17.6
E821120	0.5	41.4	17.7	< 0.1	123	6.2	188	4.6	3.01	< 0.1	< 1	0.1	< 0.1	916	67.4	130	12.7	43.8	6.5	4.2	0.4	1.7	9.9
E821121	0.3	42.7	16.0	1.6	74.9	11.9	145	0.3	0.24	< 0.1	< 1	< 0.1	< 0.1	591	22.0	53.9	5.3	20.1	3.4	3.1	0.4	2.5	9.3
E821122	0.4	32.1	14.7	< 0.1	60.6	12.1	153	1.2	0.30	< 0.1	< 1	< 0.1	< 0.1	567	24.8	47.3	5.6	21.3	3.3	3.0	0.4	2.4	11.5
E821123	0.6	45.2	15.6	< 0.1	77.5	13.9	50	0.2	0.15	< 0.1	< 1	< 0.1	< 0.1	592	29.0	55.2	6.6	24.6	3.7	3.5	0.4	2.7	13.6
E821124	0.5	21.9	13.6	< 0.1	47.8	8.3	36	1.1	0.31	< 0.1	< 1	< 0.1	< 0.1	522	17.6	33.2	3.7	14.2	2.4	2.0	0.3	1.6	6.1
E821125	0.3	46.9	15.9	0.4	75.2	12.7	119	0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	599	26.3	54.6	6.1	22.8	3.3	3.2	0.4	2.6	10.8
E821126	0.3	22.4	13.2	< 0.1	40.4	10.0	196	1.7	0.22	< 0.1	< 1	< 0.1	< 0.1	480	17.8	38.2	4.3	16.5	2.8	2.5	0.3	2.0	< 0.2
E821127	0.4	18.8	13.1	< 0.1	39.5	8.0	101	0.5	0.34	< 0.1	< 1	< 0.1	< 0.1	459	16.8	32.1	3.6	13.5	2.1	2.0	0.2	1.6	< 0.2
E821128	0.4	38.3	15.5	1.6	51.7	8.0	163	0.6	0.27	< 0.1	< 1	< 0.1	< 0.1	502	13.9	25.8	3.0	11.5	1.9	1.9	0.2	1.5	19.2
E821129	0.4	37.0	15.7	2.4	34.9	6.3	151	8.1	0.52	< 0.1	1	0.2	< 0.1	473	7.6	16.1	2.0	8.0	1.4	1.4	0.2	1.3	20.2
E821130	0.2	49.6	14.2	5.0	590	12.6	47	< 0.1	0.50	< 0.1	< 1	< 0.1	< 0.1	59	3.8	9.1	1.3	6.3	1.5	2.3	0.4	2.6	34.5
E821131	0.7	37.5	19.5	2.3	40.6	7.6	123	0.1	0.36	< 0.1	< 1	< 0.1	< 0.1	364	17.2	29.6	3.2	11.9	1.7	1.8	0.2	1.5	19.5
E821132	0.4	39.2	17.7	1.9	47.5	7.8	114	0.4	0.54	< 0.1	< 1	< 0.1	< 0.1	475	13.3	24.9	2.7	10.1	1.6	1.7	0.2	1.5	20.8
E821133	0.3	70.2	27.4	0.9	37.4	8.2	171	0.2	0.16	< 0.1	< 1	< 0.1	< 0.1	501	7.8	16.5	1.9	7.8	1.6	1.7	0.2	1.4	11.1
E821134	0.3	158	20.8	0.5	38.2	8.1	132	0.1	0.12	< 0.1	1	< 0.1	< 0.1	429	6.6	12.6	1.4	5.3	1.1	1.2	0.2	1.4	45.2
E821135	0.3	77.3	19.1	< 0.1	22.6	19.0	135	1.3	0.20	< 0.1	< 1	< 0.1	< 0.1	201	8.1	13.9	1.7	7.1	2.0	2.7	0.5	3.4	26.9
E821136	0.5	21.0	14.6	< 0.1	41.8	8.1	146	4.2	0.34	< 0.1	< 1	< 0.1	< 0.1	486	13.3	27.3	3.2	12.5	2.2	2.0	0.3	1.6	6.0
E821137	0.3	19.5	13.2	1.3	34.3	11.1	128	4.5	0.35	< 0.1	< 1	< 0.1	< 0.1	484	25.5	42.0	6.0	22.1	3.2	2.8	0.3	2.0	5.4
E821138	0.3	34.0	13.4	< 0.1	41.2	8.2	143	1.3	0.23	< 0.1	< 1	< 0.1	< 0.1	490	11.9	24.1	3.0	11.6	2.4	1.9	0.2	1.6	< 0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821139	1.0	35.5	15.0	< 0.1	53.2	8.6	124	0.4	0.12	< 0.1	< 1	< 0.1	< 0.1	486	13.3	27.7	3.3	13.1	2.4	1.9	0.3	1.7	5.2
E821140	0.3	42.8	18.5	< 0.1	67.5	4.6	288	7.0	1.89	< 0.1	1	< 0.1	< 0.1	681	28.2	81.2	6.2	22.1	3.3	2.3	0.2	1.1	4.7
E821141	0.4	30.5	15.8	0.2	54.3	8.1	70	4.5	0.40	< 0.1	< 1	< 0.1	< 0.1	532	18.4	37.5	4.3	16.0	2.9	2.2	0.3	1.7	4.9
E821142	0.3	28.4	17.3	< 0.1	51.6	8.0	145	3.1	0.30	< 0.1	< 1	< 0.1	< 0.1	584	13.3	27.2	3.1	11.9	2.3	1.8	0.2	1.6	0.8
E821143	0.3	30.3	14.3	2.1	34.5	12.6	268	0.3	0.26	< 0.1	< 1	< 0.1	< 0.1	396	28.0	53.8	6.1	22.1	3.8	3.1	0.4	2.4	1.8
E821144	0.4	39.8	15.5	< 0.1	36.7	12.5	85	0.3	0.17	< 0.1	< 1	< 0.1	< 0.1	404	21.0	42.0	4.9	18.4	3.3	2.7	0.4	2.5	4.6
E821145	0.5	35.8	17.3	< 0.1	49.0	6.8	151	4.6	0.41	< 0.1	3	< 0.1	< 0.1	524	16.6	31.1	3.3	12.4	1.6	1.6	0.2	1.3	4.4
E821146	0.4	47.7	15.2	< 0.1	37.1	11.9	251	4.3	0.42	< 0.1	1	< 0.1	< 0.1	405	23.9	48.9	5.7	21.8	3.8	3.2	0.4	2.5	2.7
E821147	0.8	31.5	21.0	3.3	31.6	5.1	105	6.7	1.15	< 0.1	1	0.1	< 0.1	411	7.0	13.7	1.5	6.0	1.0	1.1	0.2	1.1	14.0
E821148	0.7	56.6	20.6	3.1	41.6	7.8	145	9.7	0.93	< 0.1	2	0.1	< 0.1	420	12.1	24.4	2.7	10.3	1.8	1.8	0.2	1.6	30.3
E821149	0.5	26.9	18.6	1.1	40.0	7.4	153	3.0	0.48	< 0.1	< 1	< 0.1	< 0.1	473	15.6	28.2	3.1	11.8	1.9	1.8	0.2	1.6	28.9
E821150	0.4	54.6	14.1	5.8	604	13.2	56	0.8	2.17	< 0.1	< 1	0.6	< 0.1	55	3.9	9.4	1.3	6.4	1.8	2.4	0.4	2.6	31.9
E821151	0.4	41.2	23.0	0.7	30.3	5.3	141	6.8	0.69	< 0.1	1	< 0.1	< 0.1	461	4.5	10.0	1.3	5.3	1.2	1.0	0.2	1.1	6.8
E821152	0.4	27.1	14.4	< 0.1	50.4	8.6	186	0.9	0.24	< 0.1	< 1	< 0.1	< 0.1	528	11.7	23.8	2.9	11.3	1.9	1.9	0.3	1.7	4.8
E821153	0.4	34.4	16.1	1.0	49.1	7.9	82	0.3	0.28	< 0.1	< 1	< 0.1	< 0.1	495	12.7	24.4	2.8	10.2	1.8	1.7	0.2	1.5	15.8
E821154	0.4	23.7	23.0	< 0.1	53.2	5.3	78	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	577	9.6	16.6	1.8	6.7	1.4	1.1	0.1	1.0	5.3
E821155	0.4	40.3	23.3	2.5	73.0	8.3	82	0.4	0.18	< 0.1	< 1	< 0.1	< 0.1	508	10.4	21.6	2.5	9.6	1.9	1.7	0.2	1.6	5.1
E821156	0.4	50.9	15.6	0.2	32.1	9.9	192	7.1	0.55	< 0.1	1	< 0.1	< 0.1	418	14.5	30.8	3.9	15.4	2.6	2.4	0.3	2.0	3.4
E821157	0.6	39.3	17.5	1.6	12.5	4.4	138	9.2	0.76	< 0.1	1	0.2	< 0.1	435	6.2	14.3	1.8	7.3	1.3	1.1	0.2	1.1	6.1
E821158	0.5	35.3	18.8	< 0.1	38.2	4.8	100	5.6	0.38	< 0.1	< 1	0.1	< 0.1	558	7.9	15.9	1.8	6.9	1.2	1.1	0.1	1.0	6.2
E821159	0.4	41.1	18.7	0.1	42.5	6.6	115	2.5	0.33	< 0.1	< 1	< 0.1	< 0.1	545	10.1	20.3	2.4	9.4	1.7	1.4	0.2	1.2	7.7
E832269	0.8	60.8	15.5	1.1	69.9	13.6	135	0.5	0.32	< 0.1	1	< 0.1	< 0.1	527	32.4	59.2	6.9	25.3	4.2	3.5	0.4	2.6	17.7
E832270	0.3	48.9	14.0	5.6	590	12.8	45	< 0.1	0.46	< 0.1	< 1	< 0.1	< 0.1	59	4.0	9.5	1.3	6.4	1.5	2.3	0.4	2.5	32.6
E832271	0.6	60.8	14.5	1.1	56.7	12.2	82	1.6	0.45	< 0.1	1	< 0.1	< 0.1	497	26.6	52.1	5.9	21.3	3.3	3.0	0.4	2.3	17.7
E832272	0.7	62.9	16.4	< 0.1	59.8	13.8	95	0.6	0.14	< 0.1	< 1	< 0.1	< 0.1	540	31.1	61.6	7.0	25.5	4.2	3.6	0.4	2.6	20.0
E832273	0.6	55.5	14.8	1.6	55.0	11.5	135	2.5	0.47	< 0.1	1	< 0.1	< 0.1	520	26.1	48.8	5.8	21.2	3.5	3.1	0.4	2.4	10.8
E832274	2.0	8.2	2.5	0.6	7.6	5.1	22	1.8	1.18	< 0.1	< 1	0.2	< 0.1	102	8.4	13.9	1.9	7.1	1.2	1.0	0.1	0.9	37.0
E832275	2.6	15.2	4.1	0.6	12.8	20.7	< 1	0.9	0.95	< 0.1	< 1	0.1	< 0.1	217	104	157	19.1	66.8	8.7	7.4	0.7	4.3	88.4
E832276	1.5	31.0	3.6	5.5	11.9	7.2	2	2.4	1.81	< 0.1	< 1	0.2	< 0.1	152	16.3	31.6	3.6	13.5	2.0	1.9	0.2	1.4	29.7
E832277	1.4	21.7	10.6	0.3	41.6	9.0	30	2.5	0.68	< 0.1	< 1	0.2	< 0.1	450	19.6	34.6	4.3	16.4	2.7	2.3	0.3	1.7	35.3
E832278	0.9	52.1	15.0	1.4	43.7	9.3	136	7.1	0.48	< 0.1	1	0.2	< 0.1	477	17.1	32.8	3.9	14.8	2.5	2.2	0.3	1.8	15.7
E832279	3.2	24.0	9.5	5.1	38.2	9.7	50	4.7	0.87	< 0.1	< 1	0.6	< 0.1	363	18.7	37.0	4.4	16.4	2.1	2.4	0.3	1.7	26.6
E832280	0.3	42.4	18.6	< 0.1	111	6.8	214	4.1	1.65	< 0.1	< 1	< 0.1	< 0.1	940	68.4	136	13.3	44.4	5.9	4.1	0.4	1.7	4.1
E832281	5.0	6.8	2.4	4.0	6.6	7.2	2	0.8	0.58	< 0.1	< 1	1.1	< 0.1	176	14.5	23.3	3.2	11.9	1.6	1.7	0.2	1.3	56.6
E832282	1.0	41.7	11.6	10.0	38.9	12.4	28	3.2	0.81	< 0.1	1	0.2	< 0.1	430	28.5	58.4	6.2	22.9	3.9	3.3	0.4	2.4	37.6
E832283	0.9	20.8	12.4	0.8	40.5	9.2	70	2.7	0.35	< 0.1	< 1	0.1	< 0.1	473	16.9	32.3	3.9	14.8	2.1	2.2	0.3	1.7	26.4
E832284	0.7	64.4	14.7	9.1	58.0	10.5	145	3.0	0.51	< 0.1	1	< 0.1	< 0.1	540	21.7	45.2	4.9	18.2	3.2	2.6	0.3	2.0	11.3
E832285	1.6	16.6	4.5	1.4	13.8	4.9	19	2.3	1.04	< 0.1	< 1	0.2	< 0.1	239	10.7	19.1	2.4	8.9	1.4	1.4	0.2	1.0	16.1
E832286	2.4	31.9	6.5	315	15.5	9.0	3	3.1	4.25	< 0.1	< 1	0.3	< 0.1	710	19.6	46.8	4.3	16.6	2.6	2.3	0.3	1.6	15.7
E832287	1.4	57.4	7.7	451	20.4	7.8	5	4.2	5.97	< 0.1	< 1	0.3	< 0.1	744	22.7	57.2	4.9	17.7	2.6	2.3	0.3	1.5	24.8
E832288	0.9	22.3	2.7	2.1	8.7	2.6	27	1.4	0.87	< 0.1	< 1	0.1	< 0.1	141	4.8	9.9	1.2	4.1	0.6	0.6	< 0.1	0.5	5.8
E832289	1.3	35.5	6.1	2.1	31.6	8.5	7	2.1	0.59	< 0.1	< 1	0.4	< 0.1	221	20.7	38.1	4.4	16.3	2.6	2.2	0.3	1.6	20.7
E832290	0.3	48.6	14.0	4.3	577	12.9	53	< 0.1	1.99	< 0.1	< 1	< 0.1	< 0.1	53	3.8	9.1	1.3	6.3	1.6	2.4	0.4	2.6	33.4

Results

Activation Laboratories Ltd.

Report: A17-12625

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832291	0.7	12.0	1.1	0.5	1.9	5.5	2	0.4	0.84	< 0.1	< 1	< 0.1	< 0.1	74	23.2	42.5	4.6	16.3	2.3	1.9	0.2	1.2	10.6
E832292	1.6	17.0	1.3	2.6	3.5	2.1	5	0.8	1.20	< 0.1	< 1	< 0.1	< 0.1	114	4.8	7.6	1.0	3.6	0.5	0.5	< 0.1	0.4	4.4
E832293	0.9	10.7	0.9	< 0.1	1.7	0.9	4	0.5	0.99	< 0.1	< 1	< 0.1	< 0.1	68	1.4	2.7	0.3	1.2	0.2	0.2	< 0.1	0.2	< 0.2
E832294	2.8	20.3	7.4	< 0.1	21.6	30.8	26	2.6	1.11	< 0.1	< 1	0.1	< 0.1	250	165	293	32.1	107	15.4	11.9	1.3	7.3	109
E832295	2.3	26.2	2.8	2.0	9.3	8.5	< 1	0.6	1.60	< 0.1	< 1	< 0.1	< 0.1	132	28.6	63.4	6.5	23.4	3.7	2.8	0.3	2.0	20.7
E832296	1.5	10.3	1.8	13.7	4.0	6.3	6	1.2	0.61	< 0.1	< 1	< 0.1	< 0.1	115	23.7	43.2	5.0	17.8	2.2	2.0	0.3	1.4	10.5
E832297	1.4	15.4	3.9	7.9	11.4	5.6	7	2.0	2.04	< 0.1	< 1	0.1	< 0.1	188	15.2	24.3	2.9	10.8	1.7	1.4	0.2	1.0	19.0
E832298	1.8	14.7	1.5	6.7	3.8	4.1	3	1.0	2.70	< 0.1	< 1	0.1	< 0.1	116	8.5	15.9	1.9	7.1	0.9	1.0	0.1	0.8	8.5
E832299	2.1	81.6	2.6	< 0.1	6.8	14.6	29	2.2	1.08	< 0.1	< 1	0.1	< 0.1	181	57.9	99.1	11.3	39.8	5.4	4.5	0.5	3.0	75.8
E832300	0.2	34.0	17.6	< 0.1	96.4	12.1	23	0.8	5.15	< 0.1	< 1	< 0.1	< 0.1	848	128	248	25.9	84.2	10.2	8.3	0.7	3.2	4.7
E821030	0.3	49.2	14.2	3.3	578	12.7	52	< 0.1	1.09	< 0.1	< 1	< 0.1	< 0.1	56	3.8	9.1	1.3	6.3	1.5	2.3	0.4	2.4	33.2
E821031	1.5	37.2	6.4	< 0.1	31.9	41.2	4	2.0	2.11	< 0.1	< 1	0.1	< 0.1	243	181	242	36.5	128	17.4	14.5	1.5	8.3	101
E821033	2.0	8.7	2.8	< 0.1	8.7	16.0	3	1.2	1.11	< 0.1	< 1	0.1	< 0.1	202	37.2	56.8	8.0	29.8	3.7	3.9	0.4	2.6	48.9
GXR-1 Meas	15.6	752	11.2	425	2.4	27.0	20	0.8	18.9	0.8	28	29.3	8.8	687	6.9	14.3		8.3	2.4	3.8	0.7	4.8	1110
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
GXR-1 Meas	15.0	762	11.8	427	2.5	26.4	23	0.9	19.3	0.8	29	34.4	9.2	720	7.9	15.8		9.2	2.8	4.2	0.7	5.0	1180
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.6	66.1	15.0	97.1	132	12.1	41	9.9	318	0.2	7	4.5	0.8	95	53.3	104		41.0	5.7	4.6	0.5	2.8	6010
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	5.9	67.9	14.9	99.9	130	12.1	41	9.8	313	0.2	7	4.5	0.9	111	51.7	103		38.9	5.9	4.4	0.5	2.7	5870
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		101	23.4	< 0.1	93.4		47	< 0.1			< 1	< 0.1		621	35.8	85.1		37.0	6.8	6.4	0.9	6.0	29.8
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		97.7	21.8	< 0.1	93.8		48	< 0.1			< 1	< 0.1		644	35.4	85.8		36.3	6.9	6.3	0.9	5.9	27.1
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	1.0	125	32.9	232	72.8	11.7	71	0.1	0.32	< 0.1	< 1	0.3	< 0.1	1390	11.6	31.8		11.6	2.6	2.2	0.3	2.3	68.7
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
GXR-6 Meas	1.1	123	31.4	264	71.3	11.7	85	0.4	1.07	< 0.1	1	1.1	< 0.1	1440	11.8	32.3		12.0	2.4	2.3	0.3	2.3	68.0
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		62.2	13.2		3.3	15.3	40	1.4						100	3.4			4.5					94.5
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		61.5	12.8		3.0	14.4	38	1.5				0.4		105	3.4			4.7					96.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		194	27.7	23.9	141	30.4	127	13.2	2.82		3	1.0		609	47.6	107	11.9	47.4	8.0	7.8	1.0	6.6	32.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		194	25.8	24.2	131	29.7	130	15.8	2.67		4	1.1		565	48.1	107	11.9	47.4	8.9	8.1	1.0	6.8	29.8
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d		39.0	19.6	6.3	33.7	9.8	69	0.2	0.50	< 0.1	< 1	< 0.1		179	15.4	33.2	3.5	13.5	2.4	2.4	0.3	2.3	358

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(4-Acid) Meas																							
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas		40.8	18.9	5.1	35.5	10.2	40	< 0.1	0.29	< 0.1	< 1	< 0.1		176	14.9	32.3	3.5	13.2	2.4	2.3	0.4	2.3	339
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		842	21.6		127	24.7	77	3.9	12.9					1000	42.2	96.6	9.8	36.3	5.9	5.5	0.7	4.8	256
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.00 00
SdAR-M2 (U.S.G.S.) Meas		775	17.8		138	24.1	124	2.8	10.8					1050	42.2	96.4	10.0	37.5	6.0	5.4	0.7	4.8	242
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.00 00
E821009 Orig	1.2	17.6	3.3	78.8	11.9	4.2	2	1.3	1.23	< 0.1	< 1	0.2	< 0.1	168	9.6	17.9	2.2	8.1	1.3	1.1	0.1	0.8	8.5
E821009 Dup	1.3	17.0	3.2	76.3	12.0	4.9	2	1.3	1.15	< 0.1	< 1	0.2	< 0.1	166	13.1	24.3	2.9	10.6	1.7	1.6	0.2	1.0	8.5
E821012 Orig	0.6	24.3	11.3	0.2	38.3	10.9	149	6.9	0.84	< 0.1	< 1	0.1	< 0.1	462	24.3	49.2	5.3	19.5	3.0	2.9	0.3	2.2	8.5
E821012 Dup	0.7	25.5	11.6	< 0.1	41.5	10.8	138	3.4	0.79	< 0.1	< 1	0.1	< 0.1	476	25.4	51.3	5.5	20.3	3.4	2.8	0.3	2.1	9.0
E821127 Orig	0.4	18.8	13.1	< 0.1	39.5	8.0	101	0.5	0.34	< 0.1	< 1	< 0.1	< 0.1	459	16.8	32.1	3.6	13.5	2.1	2.0	0.2	1.6	< 0.2
E821127 Dup	0.4	20.6	13.8	< 0.1	42.3	7.8	100	0.9	0.22	< 0.1	< 1	< 0.1	< 0.1	469	17.3	32.3	3.6	13.4	2.3	1.9	0.2	1.5	< 0.2
E821152 Orig	0.4	27.1	14.4	< 0.1	50.4	8.6	186	0.9	0.24	< 0.1	< 1	< 0.1	< 0.1	528	11.7	23.8	2.9	11.3	1.9	1.9	0.3	1.7	4.8
E821152 Dup	0.3	27.3	15.5	< 0.1	49.8	10.1	207	1.2	0.28	< 0.1	< 1	< 0.1	< 0.1	526	14.8	30.5	3.5	13.7	2.9	2.4	0.3	2.0	4.9
E832279 Orig	3.2	24.0	9.5	5.1	38.2	9.7	50	4.7	0.87	< 0.1	< 1	0.6	< 0.1	363	18.7	37.0	4.4	16.4	2.1	2.4	0.3	1.7	26.6
E832279 Dup	3.2	25.4	9.8	5.1	38.2	9.9	56	4.6	0.95	< 0.1	< 1	0.6	< 0.1	356	18.5	35.8	4.1	15.6	2.6	2.3	0.3	1.8	26.6
E832299 Orig	2.1	81.6	2.6	< 0.1	6.8	14.6	29	2.2	1.08	< 0.1	< 1	0.1	< 0.1	181	57.9	99.1	11.3	39.8	5.4	4.5	0.5	3.0	75.8
E832299 Dup	2.2	11.4	2.5	< 0.1	6.6	14.6	5	1.4	1.03	< 0.1	< 1	< 0.1	< 0.1	185	58.6	99.0	11.2	39.3	5.7	4.6	0.5	2.8	47.4
Method Blank	0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	10.3	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	13.0	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821001	0.1	0.1	0.7	0.1	< 0.1	166	< 0.1	< 0.001	0.28	10.5	5.0	2.3
E821002	< 0.1	0.2	1.2	0.2	< 0.1	283	< 0.1	< 0.001	0.36	14.3	8.2	1.4
E821003	< 0.1	0.2	1.2	0.2	< 0.1	229	0.2	0.001	0.41	14.1	8.4	2.1
E821004	< 0.1	0.2	1.2	0.2	< 0.1	277	< 0.1	< 0.001	0.37	14.3	9.3	1.5
E821005	< 0.1	0.2	1.4	0.2	< 0.1	58.5	0.3	0.003	0.69	3.4	7.4	4.3
E821006	< 0.1	< 0.1	0.5	< 0.1	< 0.1	109	0.2	0.002	0.12	4.0	2.6	6.8
E821009	< 0.1	< 0.1	0.5	< 0.1	< 0.1	81.1	0.2	0.001	0.13	4.6	2.7	1.0

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821010	0.1	0.2	1.2	0.2	< 0.1	105	< 0.1	< 0.001	5.52	8.2	0.6	0.2
E821012	< 0.1	0.2	1.1	0.1	0.4	244	0.3	< 0.001	0.28	11.6	7.7	2.2
E821013	< 0.1	< 0.1	0.1	< 0.1	< 0.1	63.7	< 0.1	0.002	0.05	1.3	0.7	0.7
E821015	< 0.1	< 0.1	0.3	< 0.1	< 0.1	60.5	0.4	0.003	0.21	1.8	1.4	36.6
E821016	< 0.1	0.1	0.7	0.1	< 0.1	253	0.3	0.002	0.26	9.6	3.7	2.1
E821017	< 0.1	< 0.1	0.2	< 0.1	< 0.1	63.9	< 0.1	< 0.001	< 0.05	0.6	0.9	0.9
E821018	< 0.1	< 0.1	0.2	< 0.1	< 0.1	55.2	0.1	0.003	0.07	0.5	0.8	12.9
E821019	< 0.1	< 0.1	0.5	< 0.1	< 0.1	91.6	0.1	0.002	0.12	3.9	2.7	10.3
E821020	< 0.1	0.1	0.8	0.1	0.4	190	0.6	< 0.001	1.23	35.3	46.2	2.2
E821021	< 0.1	< 0.1	0.6	< 0.1	< 0.1	131	0.4	0.001	0.32	10.3	4.2	2.0
E821022	< 0.1	0.1	0.9	0.1	< 0.1	272	< 0.1	< 0.001	0.34	12.8	5.7	1.1
E821023	< 0.1	0.2	1.0	0.1	0.5	251	0.5	< 0.001	0.35	12.5	7.0	1.3
E821024	< 0.1	< 0.1	0.1	< 0.1	< 0.1	70.9	< 0.1	0.001	0.05	1.5	0.7	1.5
E821025	< 0.1	0.2	1.1	0.1	< 0.1	273	< 0.1	< 0.001	0.36	13.4	7.0	2.8
E821026	< 0.1	0.2	1.0	0.1	< 0.1	280	< 0.1	< 0.001	0.32	12.5	5.6	5.2
E821027	< 0.1	0.2	1.3	0.2	< 0.1	214	< 0.1	< 0.001	0.38	13.2	8.7	3.4
E821029	< 0.1	< 0.1	0.2	< 0.1	< 0.1	60.6	< 0.1	0.001	0.07	1.1	1.3	0.4
E821116	< 0.1	0.2	1.3	0.2	< 0.1	286	< 0.1	< 0.001	0.39	14.3	9.0	1.3
E821117	0.2	0.2	1.4	0.2	< 0.1	250	< 0.1	< 0.001	0.56	17.4	11.7	1.4
E821118	0.3	0.1	0.9	0.1	< 0.1	285	< 0.1	< 0.001	0.31	13.0	5.9	0.8
E821119	< 0.1	0.2	1.4	0.2	< 0.1	254	< 0.1	< 0.001	0.49	16.2	10.8	1.4
E821120	< 0.1	< 0.1	0.4	< 0.1	< 0.1	209	0.3	0.001	0.92	35.1	40.0	2.3
E821121	< 0.1	0.2	1.3	0.2	< 0.1	256	< 0.1	< 0.001	0.49	16.5	9.1	1.4
E821122	< 0.1	0.2	1.2	0.2	< 0.1	280	< 0.1	< 0.001	0.40	14.5	8.3	1.8
E821123	< 0.1	0.2	1.4	0.2	< 0.1	261	< 0.1	< 0.001	0.50	16.4	10.5	2.2
E821124	0.2	0.1	0.8	0.1	< 0.1	302	0.1	< 0.001	0.32	13.1	4.3	3.4
E821125	< 0.1	0.2	1.3	0.2	< 0.1	253	< 0.1	< 0.001	0.47	16.8	9.9	1.8
E821126	< 0.1	0.2	1.1	0.1	< 0.1	329	< 0.1	< 0.001	0.25	12.3	5.7	1.1
E821127	0.1	0.1	0.8	0.1	< 0.1	310	< 0.1	< 0.001	0.25	11.6	4.2	0.7
E821128	0.2	0.1	0.9	0.1	< 0.1	280	< 0.1	< 0.001	0.35	14.7	5.7	1.0
E821129	< 0.1	0.1	0.8	0.1	0.5	245	0.5	< 0.001	0.37	14.8	3.8	0.8
E821130	0.1	0.2	1.2	0.2	< 0.1	108	< 0.1	< 0.001	5.69	8.5	0.6	0.2
E821131	< 0.1	0.1	0.8	0.1	< 0.1	199	< 0.1	< 0.001	0.31	21.4	6.5	1.2
E821132	< 0.1	0.1	0.8	0.1	< 0.1	254	< 0.1	< 0.001	0.35	15.8	5.8	1.2
E821133	< 0.1	0.1	1.0	0.1	< 0.1	316	< 0.1	< 0.001	0.33	16.5	4.3	1.4
E821134	0.2	0.1	1.0	0.2	< 0.1	121	< 0.1	< 0.001	0.28	32.3	2.8	1.3
E821135	0.2	0.3	2.2	0.3	< 0.1	212	< 0.1	< 0.001	0.17	9.2	2.3	1.0
E821136	0.2	0.1	0.8	0.1	< 0.1	313	< 0.1	< 0.001	0.25	13.4	5.4	0.8
E821137	< 0.1	0.2	1.1	0.1	0.2	309	0.1	< 0.001	0.24	11.8	6.0	1.0
E821138	0.2	0.1	0.9	0.1	< 0.1	322	< 0.1	< 0.001	0.25	11.8	4.7	0.8
E821139	< 0.1	0.1	0.9	0.1	< 0.1	318	< 0.1	< 0.001	0.31	13.4	4.8	0.9
E821140	< 0.1	< 0.1	0.4	< 0.1	0.3	138	0.3	< 0.001	0.94	32.2	20.4	1.3
E821141	< 0.1	0.1	0.8	0.1	0.1	331	0.1	< 0.001	0.32	16.4	9.1	1.3



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E821142	< 0.1	0.1	0.9	0.1	< 0.1	349	< 0.1	< 0.001	0.33	14.3	3.8	0.8
E821143	< 0.1	0.2	1.3	0.2	< 0.1	300	< 0.1	< 0.001	0.22	14.7	14.5	1.3
E821144	0.1	0.2	1.4	0.2	< 0.1	304	< 0.1	< 0.001	0.22	14.1	10.3	1.2
E821145	< 0.1	0.1	0.7	< 0.1	0.1	334	0.2	< 0.001	0.31	16.2	7.7	1.0
E821146	< 0.1	0.2	1.2	0.2	< 0.1	303	< 0.1	< 0.001	0.24	15.2	10.7	1.2
E821147	0.4	< 0.1	0.6	< 0.1	0.3	232	0.2	0.002	0.33	18.8	3.9	0.7
E821148	0.4	0.1	0.9	0.1	0.6	252	0.4	< 0.001	0.40	18.3	5.8	1.1
E821149	0.3	0.1	0.8	0.1	< 0.1	210	< 0.1	< 0.001	0.39	16.1	6.4	1.4
E821150	0.4	0.2	1.2	0.2	< 0.1	117	< 0.1	< 0.001	5.88	8.7	0.7	0.2
E821151	0.1	< 0.1	0.7	0.1	0.4	358	0.2	< 0.001	0.33	17.3	3.0	0.7
E821152	< 0.1	0.1	0.9	0.1	< 0.1	307	< 0.1	< 0.001	0.35	13.0	4.5	1.0
E821153	0.3	0.1	0.8	0.1	< 0.1	252	< 0.1	< 0.001	0.34	14.3	4.7	1.0
E821154	0.2	< 0.1	0.6	< 0.1	< 0.1	406	< 0.1	< 0.001	0.36	17.4	2.8	0.9
E821155	0.2	0.1	0.9	0.1	< 0.1	333	< 0.1	< 0.001	0.38	18.5	5.8	1.2
E821156	0.4	0.2	1.1	0.1	0.3	282	0.2	< 0.001	0.25	14.3	5.5	1.1
E821157	0.4	< 0.1	0.6	< 0.1	0.5	235	0.5	< 0.001	0.30	13.4	4.8	0.5
E821158	0.3	< 0.1	0.6	< 0.1	0.3	338	0.3	< 0.001	0.34	16.7	6.7	0.8
E821159	0.4	0.1	0.7	0.1	< 0.1	338	< 0.1	< 0.001	0.33	16.8	6.9	0.9
E832269	< 0.1	0.2	1.3	0.2	< 0.1	214	< 0.1	0.001	0.52	15.3	10.5	5.2
E832270	0.1	0.2	1.2	0.2	< 0.1	109	< 0.1	< 0.001	5.89	8.7	0.8	0.2
E832271	< 0.1	0.2	1.2	0.2	< 0.1	219	< 0.1	< 0.001	0.43	13.9	9.2	3.9
E832272	< 0.1	0.2	1.4	0.2	< 0.1	226	< 0.1	< 0.001	0.49	15.7	11.3	7.1
E832273	< 0.1	0.2	1.2	0.2	0.1	227	0.1	0.001	0.46	14.5	9.5	3.2
E832274	< 0.1	< 0.1	0.5	< 0.1	< 0.1	59.3	0.3	0.003	0.10	2.3	3.3	7.0
E832275	< 0.1	0.3	1.7	0.2	< 0.1	81.4	0.3	0.003	0.22	6.6	13.2	11.0
E832276	< 0.1	< 0.1	0.7	< 0.1	< 0.1	70.5	0.4	0.002	0.17	4.1	6.0	3.9
E832277	< 0.1	0.1	0.9	0.1	< 0.1	249	0.3	0.002	0.39	10.1	5.5	8.4
E832278	< 0.1	0.1	1.0	0.1	0.3	202	0.4	0.002	0.41	13.5	6.7	2.5
E832279	< 0.1	0.1	1.0	0.1	< 0.1	183	0.6	0.004	0.38	9.2	6.6	8.0
E832280	< 0.1	< 0.1	0.5	< 0.1	< 0.1	243	0.9	< 0.001	0.96	39.2	41.1	2.8
E832281	< 0.1	< 0.1	0.6	< 0.1	< 0.1	89.3	0.2	0.004	0.17	2.2	4.1	20.9
E832282	< 0.1	0.2	1.3	0.2	< 0.1	227	0.4	0.002	0.34	11.4	7.8	2.1
E832283	< 0.1	0.1	0.9	0.1	< 0.1	276	0.3	0.002	0.29	11.0	4.7	1.9
E832284	0.1	0.2	1.1	0.1	< 0.1	248	0.1	< 0.001	0.41	14.4	7.5	1.8
E832285	< 0.1	< 0.1	0.5	< 0.1	< 0.1	129	0.2	0.001	0.16	4.9	4.5	1.5
E832286	< 0.1	0.1	0.9	0.1	< 0.1	94.6	0.4	0.003	0.45	6.6	6.5	2.0
E832287	< 0.1	0.1	0.8	0.1	< 0.1	105	0.5	0.004	0.41	8.0	6.3	1.8
E832288	< 0.1	< 0.1	0.3	< 0.1	< 0.1	86.7	0.1	< 0.001	0.11	3.8	1.8	1.1
E832289	< 0.1	0.1	0.8	0.1	< 0.1	96.9	0.4	< 0.001	0.24	7.4	6.3	3.4
E832290	0.1	0.2	1.2	0.2	< 0.1	108	< 0.1	0.001	5.84	8.8	0.7	0.2
E832291	< 0.1	< 0.1	0.5	< 0.1	< 0.1	41.7	< 0.1	< 0.001	0.08	1.4	2.3	1.1
E832292	< 0.1	< 0.1	0.2	< 0.1	< 0.1	51.4	0.1	0.002	0.06	1.1	1.1	1.0
E832293	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	44.5	< 0.1	< 0.001	< 0.05	0.7	0.6	0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832294	< 0.1	0.4	2.6	0.3	< 0.1	86.9	0.6	0.004	0.42	10.2	22.5	58.0
E832295	< 0.1	0.1	0.9	0.1	< 0.1	75.0	0.3	0.002	0.17	6.0	11.4	12.8
E832296	< 0.1	< 0.1	0.6	< 0.1	< 0.1	40.6	0.2	0.002	0.09	2.4	3.7	2.2
E832297	< 0.1	< 0.1	0.5	< 0.1	< 0.1	98.5	0.3	0.003	0.14	4.2	3.4	1.8
E832298	< 0.1	< 0.1	0.4	< 0.1	< 0.1	52.4	0.3	0.001	0.09	1.5	3.4	2.9
E832299	< 0.1	0.2	1.2	0.2	0.1	72.2	0.2	0.003	0.19	11.7	7.9	32.8
E832300	< 0.1	0.1	0.8	0.1	< 0.1	253	3.8	< 0.001	0.89	41.6	101	5.8
E821030	0.3	0.2	1.2	0.2	< 0.1	107	< 0.1	< 0.001	5.68	8.4	0.7	0.2
E821031	< 0.1	0.5	2.6	0.3	< 0.1	69.1	0.4	0.001	0.56	9.3	18.0	20.6
E821033	< 0.1	0.2	1.3	0.2	< 0.1	69.4	0.2	0.002	0.18	2.9	6.7	8.6
GXR-1 Meas		0.4	2.3	0.3	< 0.1	313	151		0.42	834	2.6	34.7
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas		0.4	2.3	0.3	< 0.1	299	152		0.42	817	3.4	45.6
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas											> 500	2600
DH-1a Cert											910	2629
DH-1a Meas											> 500	2650
DH-1a Cert											910	2629
GXR-4 Meas		0.2	1.0	0.1	0.6	216	35.4		3.34	49.2	20.6	6.0
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas		0.2	1.0	0.1	0.6	218	35.7		3.41	52.0	18.5	6.1
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas		0.5	3.2		< 0.1	184	< 0.1		0.65	25.0	11.6	2.8
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas		0.5	3.2		< 0.1	180	< 0.1		0.65	24.6	11.2	2.7
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas			1.6	0.2	< 0.1	43.6	< 0.1		2.28	104	5.4	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas			1.6	0.2	< 0.1	42.7	< 0.1		2.24	101	5.2	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas			1.9			153				6.1		
DNC-1a Cert			2.0			144				6.3		
DNC-1a Meas			1.8			151				5.9		
DNC-1a Cert			2.0			144				6.3		
SBC-1 Meas		0.5	3.4	0.5	0.5	196	1.6		0.98	37.7	16.5	6.3
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas		0.5	3.4	0.5	0.8	187	1.6		0.96	36.6	16.0	6.1
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	30.3	< 0.1		0.27	22.3	15.4	3.0
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	31.5	< 0.1		0.27	22.1	14.9	2.9

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	< 0.1	157	0.2			879	14.7	2.7
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	0.1	154	< 0.1			842	14.1	2.5
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
E821009 Orig	< 0.1	< 0.1	0.5	< 0.1	< 0.1	81.1	0.2	0.001	0.13	4.6	2.7	1.0
E821009 Dup	< 0.1	< 0.1	0.4	< 0.1	< 0.1	82.5	0.3	0.001	0.12	4.7	4.6	1.0
E821012 Orig	< 0.1	0.2	1.1	0.1	0.4	244	0.3	< 0.001	0.28	11.6	7.7	2.2
E821012 Dup	< 0.1	0.2	1.1	0.1	< 0.1	250	0.2	< 0.001	0.28	14.0	6.0	2.5
E821127 Orig	0.1	0.1	0.8	0.1	< 0.1	310	< 0.1	< 0.001	0.25	11.6	4.2	0.7
E821127 Dup	< 0.1	0.1	0.7	< 0.1	< 0.1	325	< 0.1	< 0.001	0.25	11.9	5.4	0.9
E821152 Orig	< 0.1	0.1	0.9	0.1	< 0.1	307	< 0.1	< 0.001	0.35	13.0	4.5	1.0
E821152 Dup	< 0.1	0.1	1.0	0.1	< 0.1	307	< 0.1	< 0.001	0.34	14.1	7.5	1.4
E832279 Orig	< 0.1	0.1	1.0	0.1	< 0.1	183	0.6	0.004	0.38	9.2	6.6	8.0
E832279 Dup	< 0.1	0.1	1.0	0.1	< 0.1	189	0.6	0.005	0.31	9.8	6.4	8.3
E832299 Orig	< 0.1	0.2	1.2	0.2	0.1	72.2	0.2	0.003	0.19	11.7	7.9	32.8
E832299 Dup	< 0.1	0.2	1.2	0.2	< 0.1	74.5	0.3	0.003	0.19	4.1	8.0	33.4
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.4	< 0.1	0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12627  
**Invoice Date:** 04-Jan-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

33 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT      **A17-12627**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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## Results

## Activation Laboratories Ltd.

## Report: A17-12627

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E837025	14	1.8	0.07	0.17	0.71	0.14	3.48	0.3	13	18.2	172	0.53	0.5	16.8	0.3	< 0.1	0.1	20	< 0.05	0.42	1.5	0.16	0.04
E837026	15	0.9	0.03	0.24	0.36	0.07	5.08	0.2	5	7.8	88	0.18	< 0.1	11.4	0.1	< 0.1	< 0.1	40	0.05	0.34	0.7	0.07	0.03
E837027	16	< 0.5	0.02	0.17	0.17	0.03	2.72	< 0.1	< 1	17.1	72	0.14	< 0.1	3.0	< 0.1	< 0.1	< 0.1	50	< 0.05	0.13	0.7	< 0.05	< 0.02
E837028	12	< 0.5	0.01	0.08	0.11	0.01	1.37	< 0.1	< 1	6.5	51	0.07	< 0.1	1.7	< 0.1	< 0.1	< 0.1	70	< 0.05	0.09	0.4	< 0.05	< 0.02
E837029	20	< 0.5	0.02	0.16	0.21	0.03	2.48	0.2	< 1	11.7	491	0.16	0.1	3.9	< 0.1	< 0.1	< 0.1	90	< 0.05	0.22	0.8	< 0.05	0.02
E837030	13	6.0	1.42	1.23	5.27	1.63	3.06	< 0.1	74	88.5	566	3.33	1.7	27.5	1.3	0.7	0.5	40	1.08	18.9	15.1	0.68	0.76
E837031	14	< 0.5	0.02	0.11	0.17	0.02	2.70	0.2	< 1	10.1	151	0.21	< 0.1	3.5	< 0.1	< 0.1	< 0.1	40	< 0.05	0.15	0.7	< 0.05	0.02
E837032	15	< 0.5	0.02	0.18	0.22	0.03	3.21	0.2	1	11.0	148	0.13	< 0.1	3.5	< 0.1	< 0.1	< 0.1	40	< 0.05	0.15	0.7	< 0.05	0.02
E837033	14	< 0.5	0.02	0.25	0.30	0.03	3.60	0.1	2	10.2	127	0.08	< 0.1	4.7	< 0.1	< 0.1	< 0.1	40	< 0.05	0.20	1.0	0.06	0.02
E837034	16	< 0.5	0.02	0.23	0.18	0.03	3.99	0.1	3	8.7	72	0.24	0.1	5.8	< 0.1	< 0.1	< 0.1	20	< 0.05	0.14	1.1	< 0.05	0.02
E837035	15	< 0.5	0.01	0.26	0.23	0.03	4.45	0.1	2	6.1	70	0.11	< 0.1	9.3	< 0.1	< 0.1	< 0.1	30	< 0.05	0.17	1.2	< 0.05	0.02
E837036	13	< 0.5	0.01	0.26	0.22	0.02	4.30	0.2	< 1	4.8	154	0.10	< 0.1	6.5	< 0.1	< 0.1	< 0.1	< 10	< 0.05	0.13	0.9	< 0.05	0.02
E837037	12	< 0.5	0.02	0.20	0.22	0.02	3.59	0.1	3	9.7	74	0.63	0.1	3.8	< 0.1	< 0.1	< 0.1	< 10	< 0.05	0.11	0.9	0.06	0.03
E837038	6	< 0.5	0.01	0.14	0.22	0.02	3.47	< 0.1	1	13.1	114	0.26	< 0.1	1.7	< 0.1	< 0.1	< 0.1	< 10	< 0.05	0.11	0.8	< 0.05	0.03
E837039	16	< 0.5	0.03	0.14	0.24	0.05	2.84	0.1	2	6.6	120	0.43	0.2	7.8	< 0.1	< 0.1	< 0.1	70	< 0.05	0.29	0.8	0.05	0.02
E837040	9	22.0	2.43	0.29	6.54	1.94	1.11	< 0.1	23	81.7	188	1.85	7.0	5.5	0.6	0.8	0.3	30	< 0.05	1.30	3.6	0.63	0.02
E837041	20	< 0.5	0.03	0.11	0.27	0.06	3.17	0.2	< 1	8.2	183	0.32	0.2	11.7	< 0.1	< 0.1	< 0.1	80	< 0.05	0.33	0.8	0.06	0.03
E837042	< 1	4.1	1.51	0.29	3.50	0.92	2.28	0.1	17	30.1	177	0.51	0.2	10.5	0.3	0.2	0.1	60	< 0.05	0.88	2.1	0.26	0.04
E837043	17	< 0.5	0.05	0.19	0.24	0.05	3.30	0.1	< 1	7.6	35	0.06	< 0.1	1.5	< 0.1	< 0.1	< 0.1	40	< 0.05	0.18	0.3	< 0.05	< 0.02
E837044	15	< 0.5	0.02	0.19	0.11	0.02	3.19	< 0.1	< 1	10.3	50	0.06	< 0.1	1.6	< 0.1	< 0.1	< 0.1	20	< 0.05	0.07	0.2	< 0.05	< 0.02
E837045	16	< 0.5	0.01	0.14	0.10	< 0.01	2.75	0.1	< 1	5.7	24	0.14	< 0.1	2.4	< 0.1	< 0.1	< 0.1	10	< 0.05	< 0.05	0.3	< 0.05	< 0.02
E837046	9	0.6	0.02	0.19	0.40	0.06	3.65	0.4	9	12.8	312	0.53	0.3	9.5	0.2	< 0.1	< 0.1	20	< 0.05	0.23	1.2	0.10	0.03
E837047	1	2.0	0.05	0.18	0.88	0.12	4.07	0.4	49	33.2	295	0.94	0.1	17.2	0.7	0.2	0.3	< 10	0.07	0.47	1.6	0.47	0.11
E837048	2	1.4	0.04	0.30	0.69	0.11	6.03	0.4	7	15.1	558	0.39	< 0.1	19.3	0.5	< 0.1	0.2	10	0.11	0.66	2.5	0.36	0.07
E837049	20	< 0.5	0.04	0.30	0.42	0.07	5.65	0.3	18	14.6	100	0.27	0.3	18.9	0.3	< 0.1	0.1	100	0.09	0.23	2.2	0.24	0.04
E837050	9	6.2	1.44	1.25	5.11	1.61	2.92	< 0.1	76	77.9	542	3.35	1.6	27.2	1.2	0.8	0.5	30	1.06	17.8	14.6	0.63	0.68
E821007	21	0.6	0.03	0.17	0.67	0.06	3.30	0.3	9	13.6	73	0.33	< 0.1	12.2	0.3	< 0.1	0.2	120	0.07	0.46	1.0	0.24	0.05
E821008	12	0.8	0.12	0.17	0.86	0.16	2.87	0.4	12	16.9	563	0.75	< 0.1	12.1	0.5	< 0.1	0.2	80	0.09	0.43	2.5	0.37	0.08
E821011	12	1.1	0.05	0.18	0.94	0.09	4.25	0.3	7	23.6	435	0.43	< 0.1	19.4	1.5	0.1	0.6	100	0.15	0.49	4.5	0.65	0.06
E821014	30	< 0.5	0.02	0.26	0.20	0.03	4.71	0.2	1	11.2	93	0.11	< 0.1	3.7	0.1	< 0.1	< 0.1	70	< 0.05	0.18	0.8	0.06	0.02
E821028	21	< 0.5	0.03	0.26	0.41	0.06	5.52	0.5	11	13.6	289	0.21	< 0.1	6.3	0.2	< 0.1	0.1	60	0.07	0.29	1.5	0.19	0.04
E821032	22	< 0.5	0.03	0.15	0.25	0.03	5.30	0.3	3	14.2	139	0.16	< 0.1	3.9	0.1	< 0.1	< 0.1	50	< 0.05	0.18	0.8	0.08	0.02
E821034	< 1	78.1	0.67	0.52	4.67	0.66	2.86	0.3	45	62.4	726	2.20	< 0.1	37.6	2.0	1.3	0.8	70	0.17	5.16	10.3	1.44	0.43
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	11.2	0.51	1.60	6.39	3.89	0.97	0.4	83	44.6	126	2.89	1.3	39.3		2.0		150	3.58	2.70	14.1	1.41	15.6
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	39.9	1.63	1.04	8.52	3.13	1.06		33	66.5	936	4.93	1.0	35.9	3.3	3.0	1.3	50		4.08	18.6	1.53	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	7	35.3	1.54	1.02	8.08	2.56	1.01		51	52.0	923	4.90	1.5	35.3	3.4	2.6	1.3	50		4.01	18.5	1.49	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	< 1	39.7	0.10	0.65	> 10.0	2.01	0.16	< 0.1	107	57.1	1120	5.76	2.3	25.8		1.1		80	0.18	4.35	14.0	0.64	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.6							124	250				254							54.9	0.52	
DNC-1a Cert		5.2							148	270				247							57	0.59	
DNC-1a Meas		4.6							136	165				249							57.7	0.54	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		175						0.3	204	76.8			3.9	86.1	3.3	3.2	1.3			8.14	22.1	1.79	0.63
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.1	0.09	0.21	7.84	0.39	0.18		84	470	501	13.6	2.3	221	1.3	0.5	0.5			3.83	27.1	0.59	0.31
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		21.1	0.08	0.21	7.76	0.38	0.17		106	530	500	13.9	2.4	222	1.3	0.7	0.4			3.80	28.2	0.57	0.31
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OxK110 Meas																							
OxK110 Cert																							
OxK110 Meas																							
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OxN117 Meas																							
OxN117 Cert																							
SdAR-M2 (U.S.G.S.) Meas		19.1						5.6	24	42.9			2.1	51.1	2.6	7.2	1.0	1270		1.88	12.3	1.36	1.04
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		18.7						5.5	24	42.7			1.6	52.3	2.7	7.6	1.0	1250		1.84	12.8	1.34	1.05
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							

Results

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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E837025 Orig	14	1.8	0.07	0.17	0.71	0.14	3.48	0.3	13	18.2	172	0.53	0.5	16.8	0.3	< 0.1	0.1	20	< 0.05	0.42	1.5	0.16	0.04
E837025 Dup	12	1.9	0.07	0.17	0.72	0.16	3.51	0.3	14	14.9	154	0.55	0.5	17.3	0.2	< 0.1	0.1	30	0.05	0.46	1.6	0.17	0.04
E837046 Orig	9	0.6	0.02	0.19	0.40	0.06	3.65	0.4	9	12.8	312	0.53	0.3	9.5	0.2	< 0.1	< 0.1	20	< 0.05	0.23	1.2	0.10	0.03
E837046 Dup	6	0.7	0.02	0.20	0.45	0.06	3.70	0.5	10	8.7	187	0.56	0.3	10.9	0.2	< 0.1	< 0.1	< 10	< 0.05	0.27	1.3	0.12	0.04
Method Blank	11	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.1	< 1	4.8	12	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	14	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.5	12	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	13	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	4	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	14	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.0	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	14	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.3	8	0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	14	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	2.5	8	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank																							
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837025	1.9	6.4	1.6	4.4	7.5	3.2	18	1.3	1.73	< 0.1	< 1	0.5	< 0.1	90	7.3	12.8	1.4	5.0	0.8	0.7	< 0.1	0.5	47.5
E837026	1.1	14.0	0.9	3.4	3.8	1.3	3	0.5	0.68	< 0.1	< 1	1.4	< 0.1	77	2.8	4.7	0.5	2.0	0.4	0.3	< 0.1	0.2	15.2
E837027	0.4	5.8	0.5	< 0.1	1.8	0.6	4	0.4	1.18	< 0.1	< 1	< 0.1	< 0.1	53	1.3	2.3	0.2	0.8	0.2	0.1	< 0.1	< 0.1	7.1
E837028	0.5	6.5	0.6	0.1	1.0	0.3	3	0.2	0.51	< 0.1	< 1	< 0.1	< 0.1	26	0.7	1.2	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1	15.7
E837029	0.7	13.9	0.5	1.9	1.8	0.7	4	0.4	0.99	< 0.1	< 1	< 0.1	< 0.1	43	1.5	2.7	0.3	1.1	0.1	0.2	< 0.1	< 0.1	5.1
E837030	< 0.1	52.5	17.5	6.0	542	11.4	50	< 0.1	1.32	< 0.1	< 1	< 0.1	< 0.1	55	4.3	10.0	1.3	6.4	1.5	2.3	0.4	2.2	37.0
E837031	0.4	11.0	0.6	1.4	1.7	0.5	4	0.4	0.54	< 0.1	< 1	< 0.1	< 0.1	48	1.1	2.0	0.2	0.8	< 0.1	0.1	< 0.1	< 0.1	3.2
E837032	0.5	9.7	0.6	0.2	1.8	0.8	3	0.4	1.64	< 0.1	< 1	< 0.1	< 0.1	57	1.6	2.9	0.3	1.2	0.1	0.2	< 0.1	0.1	6.4
E837033	0.7	14.4	0.7	< 0.1	2.5	1.0	2	0.5	1.63	< 0.1	< 1	< 0.1	< 0.1	70	1.9	3.6	0.4	1.5	0.2	0.2	< 0.1	0.1	8.0
E837034	0.8	9.8	0.4	< 0.1	1.8	0.7	5	0.4	4.74	< 0.1	< 1	< 0.1	< 0.1	76	2.3	3.9	0.3	1.3	0.2	0.2	< 0.1	< 0.1	8.0
E837035	1.0	3.2	0.2	< 0.1	1.9	0.9	1	0.4	11.6	< 0.1	< 1	< 0.1	< 0.1	87	2.4	4.3	0.5	1.6	0.3	0.2	< 0.1	0.2	12.8
E837036	0.7	14.9	0.2	12.3	1.8	0.7	2	0.3	4.51	< 0.1	< 1	< 0.1	< 0.1	76	1.4	2.6	0.2	1.1	0.1	0.1	< 0.1	< 0.1	7.3
E837037	0.4	8.1	0.4	< 0.1	1.7	0.8	4	0.3	1.01	< 0.1	< 1	< 0.1	< 0.1	69	2.9	5.9	0.5	1.8	0.2	0.2	< 0.1	0.1	4.7
E837038	0.4	3.4	0.6	1.4	1.5	0.6	4	0.5	0.71	< 0.1	< 1	< 0.1	< 0.1	49	1.4	2.7	0.3	1.0	0.2	0.1	< 0.1	< 0.1	4.7
E837039	0.5	7.9	0.7	3.3	2.5	0.9	6	0.6	0.85	< 0.1	< 1	0.7	< 0.1	60	1.7	3.0	0.3	1.3	0.2	0.2	< 0.1	0.1	6.0
E837040	< 0.1	52.7	15.0	< 0.1	79.2	6.9	241	4.8	5.48	< 0.1	< 1	< 0.1	< 0.1	758	55.8	103	11.8	41.6	6.6	4.5	0.4	1.8	7.4
E837041	0.6	12.7	0.6	4.0	3.0	1.1	6	0.6	0.63	< 0.1	< 1	< 0.1	< 0.1	66	2.0	3.9	0.4	1.7	0.2	0.3	< 0.1	0.2	10.6
E837042	0.5	14.0	6.5	1.1	32.4	3.1	13	1.3	0.52	< 0.1	< 1	< 0.1	< 0.1	299	5.7	10.5	1.2	4.7	0.7	0.6	< 0.1	0.6	8.5
E837043	< 0.1	6.0	0.8	< 0.1	2.3	0.6	1	0.3	0.37	< 0.1	< 1	< 0.1	< 0.1	40	1.0	2.1	0.2	0.9	0.2	0.1	< 0.1	< 0.1	2.3
E837044	0.2	4.6	0.5	< 0.1	1.0	0.2	< 1	0.2	0.52	< 0.1	< 1	< 0.1	< 0.1	30	0.6	1.2	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	3.0
E837045	0.2	5.5	0.5	0.3	0.7	0.3	2	0.2	1.65	< 0.1	< 1	< 0.1	< 0.1	27	0.9	1.4	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1	5.0
E837046	1.0	19.2	0.8	1.8	3.7	2.0	10	0.8	2.02	< 0.1	< 1	< 0.1	< 0.1	79	5.6	9.1	1.0	3.5	0.5	0.5	< 0.1	0.3	14.6

Results

Activation Laboratories Ltd.

Report: A17-12627

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837047	1.2	15.9	1.0	< 0.1	6.8	7.6	6	1.4	1.91	< 0.1	< 1	0.1	< 0.1	131	29.6	50.8	5.4	18.9	2.7	2.3	0.2	1.3	22.0
E837048	2.1	16.3	0.7	< 0.1	6.6	5.9	4	0.7	1.83	< 0.1	< 1	0.1	< 0.1	154	23.3	30.0	4.5	15.0	2.1	1.7	0.2	1.1	40.2
E837049	3.6	9.7	0.6	< 0.1	2.9	4.1	10	0.8	1.74	< 0.1	< 1	0.6	< 0.1	116	17.7	15.7	3.2	10.1	1.4	1.0	0.1	0.6	38.1
E837050	< 0.1	50.4	17.1	5.1	545	11.5	48	< 0.1	1.61	< 0.1	< 1	< 0.1	< 0.1	56	4.1	9.6	1.3	6.0	1.5	2.2	0.3	2.2	37.0
E821007	1.5	5.1	1.2	< 0.1	4.4	3.8	4	0.7	0.93	< 0.1	< 1	0.1	< 0.1	83	17.2	25.6	3.1	10.4	1.5	1.2	0.1	0.7	30.7
E821008	0.8	8.9	1.5	6.2	7.8	5.4	1	0.7	0.70	< 0.1	< 1	< 0.1	< 0.1	91	20.7	42.1	3.8	13.4	2.2	1.7	0.2	1.0	13.6
E821011	0.9	14.1	1.2	0.8	5.2	15.6	3	0.5	2.10	< 0.1	< 1	0.3	< 0.1	102	22.6	25.0	4.8	16.9	3.0	2.7	0.4	2.4	65.0
E821014	0.5	9.4	0.2	< 0.1	1.9	1.3	1	0.3	2.44	< 0.1	< 1	< 0.1	< 0.1	90	2.4	3.5	0.5	2.0	0.2	0.2	< 0.1	0.2	8.6
E821028	1.7	12.5	0.3	< 0.1	3.5	3.1	2	0.6	1.48	< 0.1	< 1	0.2	< 0.1	110	9.6	11.2	1.9	6.4	1.0	0.7	< 0.1	0.5	19.1
E821032	1.0	8.1	0.7	< 0.1	2.3	1.4	3	0.4	0.81	< 0.1	< 1	< 0.1	< 0.1	48	2.9	4.1	0.6	2.5	0.3	0.3	< 0.1	0.2	8.9
E821034	2.3	35.8	8.1	1.6	40.7	20.5	3	2.9	3.30	< 0.1	< 1	0.2	< 0.1	331	57.2	85.2	12.4	46.4	7.8	6.3	0.7	4.0	62.4
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.4	76.3	20.5	100	138	11.5	37	9.6	278	0.2	8	6.0	0.9	76	54.0	94.1		38.5	6.3	4.5	0.5	2.4	7040
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		116	22.1	< 0.1	126		29	< 0.1			< 1	< 0.1		601	39.6	75.0		38.3	7.2	6.7	1.0	5.6	33.6
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		111	18.9	< 0.1	112		46	0.2			< 1	< 0.1		608	38.9	76.4		37.2	7.2	6.9	0.9	5.5	31.5
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	0.3	128	29.4	240	89.6	11.0	62	0.1	0.35	< 0.1	< 1	0.1	< 0.1	1180	12.3	33.7		12.0	2.5	2.2	0.3	2.1	70.3
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		66.4	14.2		1.2	13.4	38	1.6				1.1		105	3.5			4.5					98.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		66.7	14.7		4.2	14.2	40	1.6				0.3		107	4.0			4.5					98.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		202	26.2	24.0	142	25.7	110	9.0	2.06		3	1.1		396	46.7	86.0	10.7	44.6	8.1	7.7	1.0	5.8	34.6
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		40.5	22.6	5.6	42.6	9.4	69	0.1	0.32	< 0.1	< 1	< 0.1		179	17.2	34.0	3.7	13.2	2.6	2.3	0.3	2.1	349
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas		41.7	22.8	4.9	43.4	9.4	73	0.2	0.43	< 0.1	1	< 0.1		188	17.9	35.3	3.7	13.4	2.6	2.4	0.3	2.1	341
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OxK110 Meas																							
OxK110 Cert																							
OxK110 Meas																							
OxK110 Cert																							
OxK110 Meas																							
OxK110 Cert																							



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OXN117 Meas																							
OXN117 Cert																							
OXN117 Meas																							
OXN117 Cert																							
OXN117 Meas																							
OXN117 Cert																							
SdAR-M2 (U.S.G.S.) Meas		795	16.8		116	21.6	81	2.7	12.5					900	44.9	84.5	10.0	37.9	6.5	5.6	0.8	4.5	247
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
SdAR-M2 (U.S.G.S.) Meas		797	16.4		116	21.2	64	2.0	10.7					898	43.3	83.8	9.6	36.2	6.7	5.5	0.8	4.4	244
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E837025 Orig	1.9	6.4	1.6	4.4	7.5	3.2	18	1.3	1.73	< 0.1	< 1	0.5	< 0.1	90	7.3	12.8	1.4	5.0	0.8	0.7	< 0.1	0.5	47.5
E837025 Dup	1.9	8.3	1.7	5.3	7.9	3.3	18	1.4	1.90	< 0.1	< 1	0.5	< 0.1	92	7.6	13.3	1.5	5.4	1.0	0.7	< 0.1	0.5	49.5
E837046 Orig	1.0	19.2	0.8	1.8	3.7	2.0	10	0.8	2.02	< 0.1	< 1	< 0.1	< 0.1	79	5.6	9.1	1.0	3.5	0.5	0.5	< 0.1	0.3	14.6
E837046 Dup	1.1	20.6	1.0	1.5	3.8	2.1	10	0.9	2.04	< 0.1	< 1	< 0.1	< 0.1	80	5.9	9.4	1.1	4.0	0.5	0.5	< 0.1	0.3	16.2
Method Blank	< 0.1	< 0.2	0.6	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.11	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.5	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.6	< 0.1	0.2	< 0.1	< 1	< 0.1	0.16	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.6	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.6	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Method Blank	< 0.1	< 0.2	0.6	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank																							
Method Blank																							
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Method Blank																							
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Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA	FA- GRA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt	g/tonne	
E837025	< 0.1	< 0.1	0.3	< 0.1	< 0.1	50.1	0.4	0.005	0.05	8.6	1.6	7.5	0.006		
E837026	0.2	< 0.1	0.1	< 0.1	< 0.1	73.4	0.1	< 0.001	< 0.05	3.2	0.6	0.8	0.012		
E837027	0.2	< 0.1	< 0.1	< 0.1	< 0.1	33.2	0.1	< 0.001	< 0.05	2.0	0.3	0.3	0.006		
E837028	0.2	< 0.1	< 0.1	< 0.1	< 0.1	18.0	0.1	< 0.001	< 0.05	1.6	0.2	0.1	< 0.005		
E837029	0.2	< 0.1	< 0.1	< 0.1	< 0.1	36.3	< 0.1	< 0.001	< 0.05	1.5	0.4	0.2	< 0.005		
E837030	0.1	0.2	1.3	0.2	< 0.1	101	< 0.1	< 0.001	5.77	8.9	0.6	0.2	3.27		
E837031	0.2	< 0.1	< 0.1	< 0.1	< 0.1	41.9	< 0.1	< 0.001	< 0.05	1.7	0.3	0.1	> 10.0	12.1	
E837032	0.2	< 0.1	< 0.1	< 0.1	< 0.1	45.8	< 0.1	< 0.001	< 0.05	0.9	0.5	0.3	< 0.005		
E837033	0.2	< 0.1	0.1	< 0.1	< 0.1	48.4	< 0.1	< 0.001	< 0.05	2.2	0.7	0.4	< 0.005		
E837034	0.1	< 0.1	< 0.1	< 0.1	< 0.1	40.3	0.1	< 0.001	< 0.05	0.9	0.4	5.3	< 0.005		
E837035	0.1	< 0.1	< 0.1	< 0.1	< 0.1	50.2	< 0.1	< 0.001	< 0.05	0.8	0.6	1.5	< 0.005		
E837036	0.1	< 0.1	< 0.1	< 0.1	< 0.1	45.6	0.1	< 0.001	< 0.05	0.7	0.4	0.5	0.006		
E837037	0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.4	< 0.1	< 0.001	< 0.05	0.7	0.4	0.6	0.006		
E837038	0.1	< 0.1	< 0.1	< 0.1	< 0.1	38.7	0.1	< 0.001	< 0.05	0.8	0.4	0.2	< 0.005		
E837039	0.1	< 0.1	0.1	< 0.1	< 0.1	38.3	0.1	< 0.001	< 0.05	0.6	0.6	0.3	0.005		
E837040	< 0.1	< 0.1	0.6	< 0.1	< 0.1	183	0.9	< 0.001	0.98	34.3	34.2	1.8	< 0.005		
E837041	0.1	< 0.1	0.1	< 0.1	< 0.1	46.3	0.2	< 0.001	< 0.05	1.4	0.7	0.2	< 0.005		
E837042	< 0.1	< 0.1	0.4	< 0.1	< 0.1	173	0.2	< 0.001	0.13	6.9	2.2	3.0	< 0.005		
E837043	0.1	< 0.1	< 0.1	< 0.1	< 0.1	37.5	< 0.1	< 0.001	0.06	0.8	0.3	0.2	< 0.005		
E837044	0.1	< 0.1	< 0.1	< 0.1	< 0.1	32.3	< 0.1	< 0.001	< 0.05	0.6	0.2	< 0.1	0.005		
E837045	0.1	< 0.1	< 0.1	< 0.1	< 0.1	28.7	< 0.1	< 0.001	< 0.05	< 0.5	0.2	< 0.1	< 0.005		
E837046	< 0.1	< 0.1	0.2	< 0.1	< 0.1	45.2	0.1	0.001	< 0.05	1.3	1.3	1.4	< 0.005		
E837047	< 0.1	0.1	0.7	< 0.1	< 0.1	57.6	0.5	< 0.001	< 0.05	2.2	4.8	6.2	< 0.005		
E837048	< 0.1	< 0.1	0.6	< 0.1	< 0.1	69.6	0.2	< 0.001	0.11	2.1	3.5	24.2	< 0.005		
E837049	< 0.1	< 0.1	0.4	< 0.1	< 0.1	62.0	0.4	< 0.001	< 0.05	1.1	1.6	64.2	< 0.005		
E837050	< 0.1	0.2	1.2	0.2	< 0.1	102	< 0.1	< 0.001	5.52	8.3	0.6	0.2	3.32		
E821007	< 0.1	< 0.1	0.4	< 0.1	< 0.1	50.0	0.2	< 0.001	< 0.05	1.3	2.4	9.0	< 0.005		
E821008	< 0.1	< 0.1	0.5	< 0.1	< 0.1	51.3	0.2	< 0.001	0.06	3.3	2.6	2.1	< 0.005		
E821011	< 0.1	0.2	1.5	0.2	< 0.1	57.2	0.2	< 0.001	0.35	4.9	3.9	16.9	< 0.005		
E821014	< 0.1	< 0.1	0.1	< 0.1	< 0.1	47.0	< 0.1	< 0.001	< 0.05	1.2	0.5	1.5	0.007		
E821028	< 0.1	< 0.1	0.3	< 0.1	< 0.1	57.6	0.1	< 0.001	< 0.05	0.9	1.7	5.0	< 0.005		
E821032	< 0.1	< 0.1	0.2	< 0.1	< 0.1	54.1	< 0.1	< 0.001	< 0.05	0.7	0.9	0.8	0.005		
E821034	< 0.1	0.3	2.0	0.3	< 0.1	112	1.1	0.002	0.36	9.1	9.2	88.3	0.007		
DH-1a Meas											> 500	2490			
DH-1a Cert											910	2629			
DH-1a Meas											> 500	2460			
DH-1a Cert											910	2629			
GXR-4 Meas		0.2	1.0	0.1	0.5	203	41.3		3.29	48.1	15.8	5.0			
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20			
SDC-1 Meas		0.5	3.5		< 0.1	166	< 0.1		0.63	24.7	10.7	2.7			
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10			
SDC-1 Meas		0.5	3.3		< 0.1	170	< 0.1		0.64	24.5	10.7	2.6			

## Results

## Activation Laboratories Ltd.

Report: A17-12627

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA	FA- GRA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au	Au	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt	g/tonne	
SDC-1 Cert	0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10				
GXR-6 Meas		1.7	0.3	< 0.1	39.3	< 0.1		2.30	89.7	4.9	1.4				
GXR-6 Cert		2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54				
DNC-1a Meas		1.9			152				6.0						
DNC-1a Cert		2.0			144				6.3						
DNC-1a Meas		2.0			152				6.0						
DNC-1a Cert		2.0			144				6.3						
SBC-1 Meas	0.5	3.4	0.5	0.3	170	1.7		0.87	34.1	13.4	5.1				
SBC-1 Cert	0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76				
OREAS 45d (4-Acid) Meas		1.5	0.2	< 0.1	29.0	0.1		0.20	21.3	12.5	2.5				
OREAS 45d (4-Acid) Cert		1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63				
OREAS 45d (4-Acid) Meas		1.5	0.2	< 0.1	30.2	0.1		0.22	23.0	12.7	2.5				
OREAS 45d (4-Acid) Cert		1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63				
OxK110 Meas															3.55
OxK110 Cert															3.602
OxK110 Meas															3.60
OxK110 Cert															3.602
OxK110 Meas															3.60
OxK110 Cert															3.602
OXN117 Meas															7.57
OXN117 Cert															7.679
OXN117 Meas															7.67
OXN117 Cert															7.679
OXN117 Meas															7.59
OXN117 Cert															7.679
SdAR-M2 (U.S.G.S.) Meas	0.5	2.9	0.4	< 0.1	139	0.2			911	13.3	2.4				
SdAR-M2 (U.S.G.S.) Cert	0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53				
SdAR-M2 (U.S.G.S.) Meas	0.4	2.9	0.4	< 0.1	145	0.1			907	13.8	2.4				
SdAR-M2 (U.S.G.S.) Cert	0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53				
OREAS 223 (Fire Assay) Meas															1.76
OREAS 223 (Fire Assay) Cert															1.78
OREAS 223 (Fire Assay) Meas															1.85
OREAS 223 (Fire Assay) Cert															1.78

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA	FA- GRA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt	g/tonne
OREAS 218 Meas													0.542	
OREAS 218 Cert													0.531	
E837025 Orig	< 0.1	< 0.1	0.3	< 0.1	< 0.1	50.1	0.4	0.005	0.05	8.6	1.6	7.5		
E837025 Dup	< 0.1	< 0.1	0.3	< 0.1	< 0.1	51.2	0.4	0.005	0.05	9.5	1.6	7.7		
E837046 Orig	< 0.1	< 0.1	0.2	< 0.1	< 0.1	45.2	0.1	0.001	< 0.05	1.3	1.3	1.4		
E837046 Dup	< 0.1	< 0.1	0.2	< 0.1	< 0.1	45.8	0.1	< 0.001	< 0.05	1.4	1.4	1.7		
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
Method Blank	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
Method Blank	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
Method Blank	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1		
Method Blank													< 0.005	
Method Blank													< 0.005	
Method Blank													< 0.005	
Method Blank														< 0.03
Method Blank														< 0.03
Method Blank														< 0.03
Method Blank														< 0.03
Method Blank														< 0.03



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12631-Au  
**Invoice Date:** 23-Nov-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

34 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA

Code UT-4 Total Digestion ICP/MS

REPORT **A17-12631-Au**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5  
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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E837291	< 0.005	
E837292	< 0.005	
E837293	< 0.005	
E837294	0.006	
E837295	< 0.005	
E837296	< 0.005	
E837297	< 0.005	
E837298	0.012	
E837299	< 0.005	
E837300	< 0.005	
E837451	< 0.005	
E837452	0.010	
E837453	0.013	
E837454	< 0.005	
E837455	< 0.005	
E837456	< 0.005	
E837457	< 0.005	
E837458	< 0.005	
E837460	0.010	
E837461	< 0.005	
E837462	< 0.005	
E837463	< 0.005	
E837464	< 0.005	
E837465	< 0.005	
E837466	< 0.005	
E837467	< 0.005	
E837468	< 0.005	
E837469	< 0.005	
E837470	> 10.0	13.6
E837471	< 0.005	
E837472	0.020	
E837473	0.006	
E837474	< 0.005	
E837475	< 0.005	
OREAS 214 Meas		3.00
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.60
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.867	
OREAS 220 (Fire Assay) Cert	0.828	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 224 (Fire Assay) Meas	2.17	
OREAS 224 (Fire Assay) Cert	2.15	
E837300 Orig	< 0.005	
E837300 Dup	< 0.005	
E837461 Orig	< 0.005	
E837461 Dup	< 0.005	
E837471 Orig	< 0.005	
E837471 Dup	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 08-Nov-17  
**Invoice No.:** A17-12631-UT4  
**Invoice Date:** 28-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

34 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Au - Fire Assay AA  
Code UT-4 Total Digestion ICP/MS

REPORT      **A17-12631-UT4**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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Results

Activation Laboratories Ltd.

Report: A17-12631

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi	
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
E837291	< 1	43.7	0.75	3.33	6.83	1.35	5.66	0.2	215	428	1360	5.89	1.8	115	1.6	0.5	0.5	40	< 0.05	12.9	22.2	0.52	0.30	
E837292	< 1	79.8	1.37	2.68	6.09	0.56	3.26	0.1	68	92.3	571	3.45	1.7	102	1.0	0.5	0.4	40	< 0.05	2.33	18.5	0.48	0.10	
E837293	< 1	206	1.01	2.61	7.97	1.45	3.23	0.3	67	137	938	5.92	2.6	8.4	0.5	5.6	0.2	20	< 0.05	8.31	2.6	0.33	0.59	
E837294	< 1	11.1	0.82	1.81	3.86	0.87	3.27	4.2	65	189	1390	6.76	1.2	24.3	0.4	0.2	0.1	30	0.12	1.57	10.4	0.16	0.23	
E837295	< 1	7.6	0.63	8.93	2.16	0.10	6.96	0.2	83	2440	1640	9.70	0.4	349	0.8	0.2	0.2	60	< 0.05	5.46	80.7	0.32	0.04	
E837296	< 1	12.2	1.41	5.32	4.62	0.23	7.98	0.4	189	543	1790	10.1	1.0	154	1.6	0.2	0.5	40	< 0.05	0.30	65.0	0.51	0.37	
E837297	< 1	9.4	2.07	2.75	6.57	0.36	5.93	0.3	252	164	1800	9.36	2.1	124	3.0	0.4	1.0	40	< 0.05	0.39	51.8	0.78	0.05	
E837298	< 1	7.2	1.63	5.79	4.15	0.11	6.76	< 0.1	211	358	1710	9.48	1.1	152	1.3	< 0.1	0.5	20	< 0.05	3.09	60.6	0.37	0.03	
E837299	< 1	39.4	> 3.00	2.82	8.00	0.78	3.97	< 0.1	89	90.6	842	5.13	2.9	85.5	2.5	3.4	0.9	50	< 0.05	2.02	28.0	1.23	0.15	
E837300	< 1	24.0	2.76	0.27	7.34	4.47	0.98	< 0.1	16	24.4	246	1.55	6.7	2.9	0.4	1.0	0.2	20	< 0.05	1.93	3.1	0.50	0.03	
E837451	< 1	6.0	1.68	6.31	4.79	0.08	6.98	0.1	201	298	1250	10.4	1.2	151	1.7	0.3	0.6	10	< 0.05	0.32	54.9	0.58	0.05	
E837452	< 1	15.5	1.94	3.30	7.36	0.27	6.24	0.2	342	92.8	1840	11.5	2.2	81.7	3.2	0.8	1.0	10	< 0.05	0.36	53.4	0.97	0.03	
E837453	< 1	14.5	0.25	9.65	3.11	0.09	6.51	< 0.1	156	1110	1700	10.5	0.7	561	1.0	0.1	0.3	10	< 0.05	2.90	89.7	0.36	0.05	
E837454	9	5.4	0.96	7.48	3.81	0.06	7.22	0.2	197	1410	1870	10.5	0.9	332	1.2	0.1	0.4	50	< 0.05	0.39	78.2	0.48	0.02	
E837455	684	75.7	1.01	1.05	7.66	1.56	1.03	0.3	144	351	1370	10.1	2.4	44.5	1.6	1.2	0.5	40	0.41	4.49	7.0	0.68	0.19	
E837456	< 1	11.6	> 3.00	2.50	8.50	0.42	3.28	< 0.1	90	143	951	3.69	2.9	112	1.4	0.7	0.5	50	< 0.05	0.76	20.3	0.54	0.07	
E837457	< 1	54.9	1.84	3.68	8.18	0.77	5.96	0.1	151	157	1410	7.89	2.0	58.1	1.7	0.6	0.6	40	< 0.05	1.75	43.7	0.62	0.08	
E837458	< 1	96.3	> 3.00	0.20	7.71	2.74	1.16	< 0.1	7	13.3	350	1.34	3.4	2.0	0.5	1.4	0.2	40	< 0.05	4.63	2.3	0.33	0.03	
E837460	< 1	19.7	2.42	0.56	7.76	3.93	1.37	< 0.1	33	30.2	406	3.13	1.8	4.2	1.9	1.6	0.6	40	< 0.05	0.76	6.4	1.09	< 0.02	
E837461	< 1	215	2.36	2.32	9.04	1.26	3.77	0.2	93	22.5	781	4.00	2.9	40.4	1.6	1.0	0.5	40	< 0.05	8.67	21.9	0.48	0.23	
E837462	< 1	202	> 3.00	1.34	7.23	2.22	0.84	< 0.1	17	19.3	346	2.60	4.3	3.4	1.1	1.8	0.4	30	< 0.05	68.6	9.2	0.47	1.83	
E837463	< 1	151	2.54	1.64	8.93	1.02	4.24	< 0.1	97	38.9	950	5.37	4.2	33.6	2.0	1.0	0.7	20	< 0.05	7.57	19.8	0.76	0.21	
E837464	< 1	29.8	2.25	2.62	8.81	1.08	5.27	< 0.1	105	114	750	4.26	2.6	121	1.3	0.8	0.4	20	< 0.05	1.58	22.2	0.63	0.33	
E837465	< 1	216	> 3.00	0.59	7.50	1.87	1.54	0.2	40	24.8	1160	2.07	2.6	7.1	0.7	6.0	0.2	40	0.31	32.8	6.6	0.17	0.49	
E837466	2	308	2.06	1.78	7.79	1.83	3.36	0.1	93	100	1140	6.75	3.7	39.4	2.0	3.4	0.6	50	< 0.05	55.8	20.9	0.71	0.35	
E837467	< 1	61.6	> 3.00	0.03	7.14	2.64	0.24	< 0.1	< 1	17.2	1370	0.68	1.9	0.6	1.5	2.8	0.4	40	0.24	8.87	0.2	< 0.05	3.25	
E837468	< 1	208	2.96	3.08	8.90	1.41	2.91	< 0.1	85	88.5	676	7.47	3.2	65.1	2.5	0.9	0.8	40	< 0.05	14.1	29.8	0.80	0.39	
E837469	< 1	136	> 3.00	1.09	> 10.0	2.27	2.17	0.1	65	19.6	538	3.28	3.8	12.9	1.5	1.2	0.5	50	< 0.05	8.57	12.0	0.62	0.15	
E837470	< 1	16.7	0.13	1.46	2.00	0.30	1.92	0.1	25	43.0	592	22.0	0.6	24.9	0.8	0.7	0.3	290	3.26	7.59	9.1	0.40	1.19	
E837471	< 1	68.8	> 3.00	0.11	6.92	3.70	0.61	< 0.1	10	15.1	370	1.03	2.4	1.0	1.1	2.5	0.4	40	< 0.05	9.70	0.8	0.20	11.4	
E837472	< 1	142	2.09	0.95	9.81	1.07	2.35	< 0.1	60	60.5	640	4.08	3.5	51.3	1.5	1.4	0.5	30	< 0.05	5.29	17.6	0.76	2.04	
E837473	< 1	178	2.09	0.61	9.90	3.36	0.63	< 0.1	47	14.0	106	3.34	4.7	1.7	1.1	1.4	0.4	40	< 0.05	12.7	1.9	0.67	1.20	
E837474	< 1	36.9	2.85	0.09	8.51	4.83	0.43	0.2	4	16.6	2080	0.87	2.6	1.5	1.3	2.6	0.4	30	0.32	9.89	1.0	0.06	2.11	
E837475	< 1	124	1.33	2.89	9.45	1.30	6.21	0.1	62	53.6	1110	5.18	1.7	100	1.6	0.8	0.5	40	< 0.05	5.55	26.5	0.62	0.15	
GXR-1 Meas	< 1	8.3	0.04	0.20	2.01	0.04	0.83	2.7	75	12.4	944	24.3	0.4	37.0		1.1		3590	30.7	2.69	7.7	0.56	1400	
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380	
GXR-1 Meas	< 1	8.0	0.04	0.20	2.06	0.04	0.79	2.8	77	16.2	926	26.2	0.5	38.0		1.0		2980	32.0	2.80	8.7	0.56	1360	
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380	
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas	< 1	10.6	0.48	1.75	6.32	3.71	0.90	0.3	80	39.4	141	2.98	1.3	35.9		2.0		110	3.29	2.36	13.5	1.22	17.0	

Results

Activation Laboratories Ltd.

Report: A17-12631

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
GXR-4 Meas	< 1	10.8	0.44	1.60	6.23	3.83	0.94	0.3	83	40.2	155	3.07	1.2	36.7		1.9		230	3.21	2.26	13.8	1.23	17.3
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	35.7	1.61	1.09	8.08	2.27	1.02		57	65.6	953	5.27	1.2	34.8	3.4	3.1	1.2	60		3.54	19.1	1.35	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
SDC-1 Meas	< 1	34.5	1.59	1.08	8.31	2.23	0.97		54	58.6	918	5.03	1.2	34.5	3.4	2.7	1.1	70		3.74	19.2	1.29	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	37.3	0.10	0.73	> 10.0	1.89	0.19	0.1	113	47.1	1100	6.35	1.9	26.0		1.2		100	0.14	3.62	15.0	0.58	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
GXR-6 Meas	< 1	36.3	0.10	0.66	> 10.0	1.96	0.18	< 0.1	135	55.1	1110	5.92	2.3	24.2		1.2		70	0.13	3.78	14.1	0.54	0.17
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.7							142	183											62.3	0.49	
DNC-1a Cert		5.2							148	270											57	0.59	
DNC-1a Meas		4.6							139	164											59.8	0.49	
DNC-1a Cert		5.2							148	270											57	0.59	
SBC-1 Meas		170						0.4	243	79.9			3.2	88.9	3.6	3.4	1.2			7.51	24.5	1.71	0.66
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
SBC-1 Meas		164						0.4	237	92.9			3.6	87.7	3.8	3.3	1.2			7.82	25.5	1.69	0.64
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.4	0.08	0.24	7.35	0.42	0.17		104	554	515	15.5	1.8	224	1.3	0.7	0.4			3.36	31.9	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
OREAS 45d (4-Acid) Meas		21.1	0.08	0.22	7.43	0.41	0.18		72	467	506	14.4	1.0	218	1.3	0.7	0.4			3.27	29.8	0.51	0.32
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		19.3						5.7	23	45.4			1.2	55.4	2.9	7.4	0.9	1150		1.62	15.6	1.20	1.03
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
SdAR-M2 (U.S.G.S.) Meas		17.4						5.7	21	37.2			3.8	48.7	2.8	6.7	0.9	1010		1.72	14.3	1.17	0.99
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
E837464 Orig	< 1	29.8	2.25	2.62	8.81	1.08	5.27	< 0.1	105	114	750	4.26	2.6	121	1.3	0.8	0.4	20	< 0.05	1.58	22.2	0.63	0.33
E837464 Dup	< 1	29.5	2.24	2.76	8.90	0.98	4.92	< 0.1	99	101	756	4.42	2.5	124	1.3	0.8	0.5	10	< 0.05	1.58	22.9	0.61	0.34
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	9.8	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	6.1	10	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	6.1	9	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	4	< 0.01	< 0.1	< 0.5	< 0.1	0.1	< 0.1	60	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.9	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	40	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.9	7	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02
Method Blank	< 1	< 0.5	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 1	8.6	9	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
E837291	1.0	87.2	13.2	0.3	49.8	13.4	72	3.9	2.17	< 0.1	< 1	0.2	< 0.1	214	6.8	14.6	1.8	7.6	1.7	2.0	0.3	2.5	61.2	
E837292	0.3	37.6	10.9	< 0.1	29.0	9.7	70	0.5	0.65	< 0.1	< 1	< 0.1	< 0.1	101	9.2	19.0	2.0	8.0	1.5	1.8	0.3	1.8	52.0	
E837293	0.7	23.1	16.8	0.4	74.2	5.1	109	4.2	3.01	< 0.1	4	< 0.1	< 0.1	115	4.7	8.5	0.9	3.5	0.6	0.8	0.1	0.9	41.6	
E837294	0.6	537	8.2	2.2	21.1	4.0	52	2.0	4.66	< 0.1	< 1	0.3	< 0.1	139	3.1	5.4	0.6	2.2	0.4	0.6	< 0.1	0.6	38.5	
E837295	0.2	88.8	6.8	< 0.1	7.2	6.2	15	< 0.1	0.26	< 0.1	< 1	0.2	< 0.1	34	0.9	2.5	0.4	2.2	0.6	1.1	0.2	1.3	< 0.2	
E837296	< 0.1	113	10.1	< 0.1	5.0	12.9	31	< 0.1	0.12	< 0.1	< 1	< 0.1	< 0.1	173	2.7	6.7	1.0	5.0	1.4	2.1	0.4	2.6	96.7	
E837297	0.2	148	13.5	< 0.1	7.5	24.4	74	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	280	4.7	11.8	1.7	8.4	2.3	3.5	0.6	4.8	79.6	
E837298	0.2	58.0	8.1	3.6	6.6	11.2	37	0.1	0.12	< 0.1	< 1	0.3	< 0.1	132	1.8	5.0	0.8	3.9	1.3	1.8	0.3	2.3	254	
E837299	0.3	70.4	16.6	4.1	26.3	23.1	143	1.2	0.27	< 0.1	< 1	0.3	< 0.1	280	31.2	62.9	7.3	27.9	4.8	5.4	0.9	5.4	66.1	
E837300	0.5	35.6	19.1	< 0.1	129	4.7	251	3.8	1.09	< 0.1	< 1	< 0.1	< 0.1	873	55.2	114	10.5	34.6	4.7	3.4	0.3	1.3	3.3	
E837451	0.2	63.2	10.1	12.3	1.0	13.7	44	1.1	0.30	< 0.1	< 1	0.3	< 0.1	25	2.2	6.3	1.0	5.1	1.5	2.3	0.4	2.7	< 0.2	
E837452	0.4	107	16.5	< 0.1	4.9	26.2	86	2.4	0.33	< 0.1	< 1	< 0.1	< 0.1	68	5.5	13.8	1.9	9.3	2.5	3.8	0.6	4.8	94.4	
E837453	0.3	80.8	7.8	256	5.3	8.2	24	1.1	0.22	< 0.1	< 1	0.7	< 0.1	22	1.9	4.7	0.6	3.6	0.9	1.6	0.2	1.6	105	
E837454	0.4	90.6	8.3	5.2	1.5	9.6	32	1.7	0.25	< 0.1	< 1	2.7	< 0.1	67	1.7	4.7	0.7	3.9	1.3	1.7	0.3	2.0	86.7	
E837455	1.3	148	19.2	171	54.4	14.4	96	5.2	3.50	< 0.1	4	0.7	0.1	273	16.0	29.4	3.2	12.2	2.1	2.3	0.3	2.6	25.3	
E837456	0.3	51.5	15.1	< 0.1	14.3	12.7	119	0.9	0.47	< 0.1	< 1	< 0.1	< 0.1	110	11.1	23.6	2.5	9.4	2.0	2.1	0.3	2.2	41.2	
E837457	0.3	77.4	16.2	< 0.1	34.1	14.2	84	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	198	5.5	14.5	1.7	7.8	1.8	2.4	0.4	2.7	50.5	
E837458	0.4	48.2	19.7	< 0.1	151	5.7	127	8.6	0.87	< 0.1	4	< 0.1	< 0.1	604	24.5	44.4	4.3	13.8	2.0	1.8	0.2	1.1	< 0.2	
E837460	0.3	79.8	24.2	< 0.1	192	19.4	157	0.3	0.89	< 0.1	< 1	< 0.1	< 0.1	1010	106	232	25.1	88.0	10.8	7.2	0.7	3.9	13.6	
E837461	0.4	60.6	17.0	< 0.1	96.2	14.7	114	1.8	1.26	< 0.1	1	< 0.1	< 0.1	243	6.5	14.3	1.4	5.6	1.4	2.0	0.3	2.4	25.6	
E837462	0.4	46.1	18.0	< 0.1	246	9.9	190	1.4	0.67	< 0.1	2	< 0.1	< 0.1	311	14.1	30.5	2.9	10.4	1.7	1.9	0.3	1.8	3.2	
E837463	0.4	70.8	18.0	< 0.1	35.1	17.7	186	3.4	1.03	< 0.1	1	< 0.1	< 0.1	357	17.0	35.4	3.9	14.7	2.2	2.8	0.4	3.0	26.7	
E837464	0.4	47.8	21.9	< 0.1	42.1	12.0	109	5.5	1.45	< 0.1	2	0.1	< 0.1	175	13.1	24.7	2.6	9.6	2.0	2.3	0.3	2.2	78.8	
E837465	0.4	95.0	30.5	1.5	267	6.5	80	53.5	0.80	< 0.1	25	0.1	< 0.1	167	3.8	10.3	1.1	4.3	1.2	1.2	0.2	1.4	0.9	
E837466	0.4	106	18.7	0.5	228	16.6	179	0.2	0.24	< 0.1	4	< 0.1	< 0.1	161	8.5	17.1	1.9	7.5	1.8	2.1	0.4	2.8	30.6	
E837467	0.4	40.2	31.4	0.2	274	16.9	24	38.8	0.79	< 0.1	19	< 0.1	< 0.1	5	4.2	11.0	1.1	3.9	1.3	1.5	0.3	2.4	< 0.2	
E837468	0.4	107	19.4	0.9	71.7	21.9	156	0.2	1.50	< 0.1	< 1	< 0.1	< 0.1	356	10.3	25.4	2.6	10.3	1.9	2.5	0.4	3.5	115	
E837469	0.3	64.1	21.3	< 0.1	91.5	14.1	161	0.2	0.14	< 0.1	< 1	< 0.1	< 0.1	405	14.8	33.2	3.6	13.3	2.8	2.6	0.4	2.6	4.4	
E837470	1.3	30.1	6.3	9350	15.4	7.8	36	1.9	4.52	< 0.1	5	3.0	0.6	48	6.8	14.0	1.6	6.3	1.1	1.3	0.2	1.3	65.9	
E837471	0.3	40.5	28.1	2.2	205	12.4	78	20.5	0.88	< 0.1	11	< 0.1	< 0.1	161	11.5	24.1	2.6	9.1	2.2	2.0	0.3	2.2	5.0	
E837472	0.5	64.7	18.2	2.1	41.6	13.5	146	0.2	0.90	< 0.1	< 1	< 0.1	< 0.1	244	23.9	45.7	5.1	19.2	3.3	3.3	0.4	2.5	155	
E837473	0.7	35.0	20.8	0.2	99.0	10.4	199	0.6	0.61	< 0.1	2	< 0.1	< 0.1	435	23.8	45.2	4.8	17.0	2.6	2.6	0.3	1.9	49.6	
E837474	0.4	35.0	31.8	0.7	384	16.9	36	48.1	1.13	< 0.1	5	0.2	< 0.1	69	3.7	8.9	1.1	4.0	1.5	1.7	0.4	2.6	< 0.2	
E837475	0.4	70.3	17.7	< 0.1	70.3	14.7	70	0.4	0.32	< 0.1	< 1	< 0.1	< 0.1	378	12.4	25.2	2.9	11.1	2.2	2.6	0.4	2.7	50.8	
GXR-1 Meas	15.6	752	11.2	425	2.4	27.0	20	0.8	18.9	0.8	28	29.3	8.8	687	6.9	14.3		8.3	2.4	3.8	0.7	4.8	1110	
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110	
GXR-1 Meas	15.0	762	11.8	427	2.5	26.4	23	0.9	19.3	0.8	29	34.4	9.2	720	7.9	15.8		9.2	2.8	4.2	0.7	5.0	1180	
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110	
DH-1a Meas																								
DH-1a Cert																								
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas	5.6	66.1	15.0	97.1	132	12.1	41	9.9	318	0.2	7	4.5	0.8	95	53.3	104		41.0	5.7	4.6	0.5	2.8	6010	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
GXR-4 Meas	5.9	67.9	14.9	99.9	130	12.1	41	9.8	313	0.2	7	4.5	0.9	111	51.7	103		38.9	5.9	4.4	0.5	2.7	5870
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		101	23.4	< 0.1	93.4		47	< 0.1			< 1	< 0.1		621	35.8	85.1		37.0	6.8	6.4	0.9	6.0	29.8
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
SDC-1 Meas		97.7	21.8	< 0.1	93.8		48	< 0.1			< 1	< 0.1		644	35.4	85.8		36.3	6.9	6.3	0.9	5.9	27.1
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	1.0	125	32.9	232	72.8	11.7	71	0.1	0.32	< 0.1	< 1	0.3	< 0.1	1390	11.6	31.8		11.6	2.6	2.2	0.3	2.3	68.7
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
GXR-6 Meas	1.1	123	31.4	264	71.3	11.7	85	0.4	1.07	< 0.1	1	1.1	< 0.1	1440	11.8	32.3		12.0	2.4	2.3	0.3	2.3	68.0
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		62.2	13.2		3.3	15.3	40	1.4				0.3		100	3.4			4.5					94.5
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
DNC-1a Meas		61.5	12.8		3.0	14.4	38	1.5				0.4		105	3.4			4.7					96.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		194	27.7	23.9	141	30.4	127	13.2	2.82		3	1.0		609	47.6	107	11.9	47.4	8.0	7.8	1.0	6.6	32.2
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
SBC-1 Meas		194	25.8	24.2	131	29.7	130	15.8	2.67		4	1.1		565	48.1	107	11.9	47.4	8.9	8.1	1.0	6.8	29.8
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		39.0	19.6	6.3	33.7	9.8	69	0.2	0.50	< 0.1	< 1	< 0.1		179	15.4	33.2	3.5	13.5	2.4	2.4	0.3	2.3	358
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
OREAS 45d (4-Acid) Meas		40.8	18.9	5.1	35.5	10.2	40	< 0.1	0.29	< 0.1	< 1	< 0.1		176	14.9	32.3	3.5	13.2	2.4	2.3	0.4	2.3	339
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		842	21.6		127	24.7	77	3.9	12.9					1000	42.2	96.6	9.8	36.3	5.9	5.5	0.7	4.8	256
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
SdAR-M2 (U.S.G.S.) Meas		775	17.8		138	24.1	124	2.8	10.8					1050	42.2	96.4	10.0	37.5	6.0	5.4	0.7	4.8	242
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
E837464 Orig	0.4	47.8	21.9	< 0.1	42.1	12.0	109	5.5	1.45	< 0.1	2	0.1	< 0.1	175	13.1	24.7	2.6	9.6	2.0	2.3	0.3	2.2	78.8
E837464 Dup	0.5	52.2	22.0	< 0.1	40.5	12.1	105	3.0	1.44	< 0.1	2	< 0.1	< 0.1	178	13.1	24.4	2.5	9.8	2.0	2.2	0.3	2.2	79.9
Method Blank	0.1	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	10.3	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	13.0	0.3	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank	0.2	< 0.2	0.2	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.08	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E837291	< 0.1	0.2	1.6	0.2	0.3	114	2.1	0.001	0.59	10.4	2.5	0.7
E837292	0.4	0.2	1.0	0.1	< 0.1	194	< 0.1	< 0.001	0.18	3.6	3.8	0.7
E837293	< 0.1	< 0.1	0.6	< 0.1	0.3	48.9	6.5	< 0.001	0.44	13.2	2.8	1.0
E837294	< 0.1	< 0.1	0.5	< 0.1	0.1	54.0	0.5	0.001	0.17	12.3	1.2	0.5
E837295	0.4	0.1	0.7	< 0.1	< 0.1	35.6	< 0.1	< 0.001	0.10	0.8	0.2	< 0.1
E837296	0.3	0.2	1.5	0.2	< 0.1	71.8	< 0.1	< 0.001	< 0.05	9.4	0.7	1.3
E837297	< 0.1	0.5	3.1	0.4	< 0.1	115	< 0.1	< 0.001	0.08	3.1	1.2	0.3
E837298	0.4	0.2	1.3	0.2	< 0.1	58.7	< 0.1	< 0.001	0.08	5.2	0.5	0.2
E837299	< 0.1	0.3	2.1	0.3	< 0.1	390	< 0.1	< 0.001	0.18	8.6	15.5	1.8
E837300	< 0.1	< 0.1	0.3	< 0.1	0.1	216	0.7	< 0.001	0.99	38.0	37.9	2.7
E837451	0.3	0.2	1.6	0.2	< 0.1	96.0	< 0.1	< 0.001	< 0.05	3.6	0.6	0.2
E837452	0.3	0.5	3.2	0.4	< 0.1	91.4	0.2	< 0.001	< 0.05	2.4	1.3	0.3
E837453	0.7	0.1	0.9	0.1	< 0.1	19.4	0.3	< 0.001	0.07	< 0.5	0.4	0.1
E837454	0.2	0.2	1.1	0.1	0.1	47.5	0.4	< 0.001	< 0.05	2.5	0.5	0.1
E837455	< 0.1	0.2	1.7	0.2	0.3	74.5	3.6	0.004	0.70	70.5	7.3	1.6
E837456	< 0.1	0.2	1.4	0.2	< 0.1	200	< 0.1	< 0.001	0.09	6.0	4.5	1.3
E837457	0.3	0.2	1.6	0.2	< 0.1	166	< 0.1	< 0.001	0.26	7.1	3.6	1.1
E837458	< 0.1	< 0.1	0.5	< 0.1	0.3	167	0.4	< 0.001	1.08	20.0	13.1	1.9
E837460	< 0.1	0.2	1.5	0.2	< 0.1	236	< 0.1	0.002	1.45	38.1	81.2	2.6
E837461	0.5	0.2	1.6	0.2	< 0.1	160	< 0.1	< 0.001	0.64	9.1	6.8	1.4
E837462	0.4	0.2	1.1	0.2	< 0.1	113	< 0.1	< 0.001	2.60	9.5	9.0	2.1
E837463	0.3	0.3	1.9	0.3	< 0.1	318	< 0.1	< 0.001	0.23	7.7	5.5	1.0
E837464	0.3	0.2	1.3	0.2	0.3	337	0.8	< 0.001	0.21	5.1	4.4	1.2
E837465	< 0.1	0.1	0.8	0.1	20.3	88.3	0.9	< 0.001	3.08	10.8	3.4	2.2
E837466	< 0.1	0.3	2.3	0.3	< 0.1	194	< 0.1	< 0.001	1.76	9.4	5.3	3.2
E837467	< 0.1	0.3	2.7	0.4	7.3	4.0	2.2	< 0.001	2.12	16.9	3.8	2.3
E837468	< 0.1	0.4	2.6	0.3	< 0.1	238	< 0.1	< 0.001	0.48	8.3	3.5	0.8
E837469	< 0.1	0.2	1.5	0.2	< 0.1	158	< 0.1	< 0.001	0.54	12.3	9.4	2.1
E837470	0.1	0.1	0.8	0.1	0.1	79.5	94.0	0.001	0.13	8.0	1.7	0.5
E837471	0.1	0.2	1.8	0.2	4.7	35.7	0.9	< 0.001	1.32	17.7	8.1	4.0
E837472	< 0.1	0.2	1.5	0.2	< 0.1	179	< 0.1	0.001	0.28	11.5	9.0	5.4
E837473	0.1	0.2	1.1	0.2	< 0.1	145	0.7	< 0.001	0.56	12.3	12.6	3.9
E837474	< 0.1	0.2	2.1	0.3	16.1	17.8	1.0	< 0.001	2.66	14.1	4.0	3.5
E837475	0.3	0.2	1.6	0.2	< 0.1	607	< 0.1	< 0.001	0.45	8.1	4.9	1.1
GXR-1 Meas		0.4	2.3	0.3	< 0.1	313	151		0.42	834	2.6	34.7
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
GXR-1 Meas		0.4	2.3	0.3	< 0.1	299	152		0.42	817	3.4	45.6
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9
DH-1a Meas										> 500	2600	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DH-1a Cert											910	2629
DH-1a Meas											> 500	2650
DH-1a Cert											910	2629
GXR-4 Meas		0.2	1.0	0.1	0.6	216	35.4		3.34	49.2	20.6	6.0
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
GXR-4 Meas		0.2	1.0	0.1	0.6	218	35.7		3.41	52.0	18.5	6.1
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20
SDC-1 Meas		0.5	3.2		< 0.1	184	< 0.1		0.65	25.0	11.6	2.8
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
SDC-1 Meas		0.5	3.2		< 0.1	180	< 0.1		0.65	24.6	11.2	2.7
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10
GXR-6 Meas			1.6	0.2	< 0.1	43.6	< 0.1		2.28	104	5.4	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
GXR-6 Meas			1.6	0.2	< 0.1	42.7	< 0.1		2.24	101	5.2	1.5
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54
DNC-1a Meas			1.9			153				6.1		
DNC-1a Cert			2.0			144				6.3		
DNC-1a Meas			1.8			151				5.9		
DNC-1a Cert			2.0			144				6.3		
SBC-1 Meas		0.5	3.4	0.5	0.5	196	1.6		0.98	37.7	16.5	6.3
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
SBC-1 Meas		0.5	3.4	0.5	0.8	187	1.6		0.96	36.6	16.0	6.1
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	30.3	< 0.1		0.27	22.3	15.4	3.0
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	31.5	< 0.1		0.27	22.1	14.9	2.9
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	< 0.1	157	0.2			879	14.7	2.7
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
SdAR-M2 (U.S.G.S.) Meas		0.4	2.8	0.4	0.1	154	< 0.1			842	14.1	2.5
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53
E837464 Orig	0.3	0.2	1.3	0.2	0.3	337	0.8	< 0.001	0.21	5.1	4.4	1.2
E837464 Dup	0.4	0.2	1.3	0.2	< 0.1	333	0.3	< 0.001	0.21	5.0	4.3	1.2
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.4	< 0.1	0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1



**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13833  
**Invoice Date:** 29-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

33 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-13833**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva". The signature is written in a cursive style with a horizontal line underneath it.

Elitsa Hrischeva, 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



**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13833  
**Invoice Date:** 29-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

33 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-13833**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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## Results

## Activation Laboratories Ltd.

## Report: A17-13833

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832001	6	49.3	2.03	0.71	5.86	1.27	2.72	0.3	79	65.0	610	4.43	0.5	22.7	1.4	1.1	0.6	60	< 0.05	3.62	11.7	0.81	0.37
E832002	11	63.9	2.13	0.83	6.55	1.43	2.41	0.3	78	86.5	824	4.45	0.6	33.3	1.7	1.4	0.6	90	0.07	3.90	14.6	0.94	0.42
E832003	11	25.3	2.53	0.38	7.87	1.72	1.55	< 0.1	49	46.0	269	2.59	2.9	19.4	0.7	1.6	0.3	60	< 0.05	1.70	6.9	0.56	0.22
E832004	8	24.3	2.50	0.38	7.91	1.80	1.47	< 0.1	40	54.2	265	2.30	3.9	20.1	0.8	1.5	0.3	60	< 0.05	1.50	7.0	0.58	0.27
E832005	9	23.4	2.53	0.34	7.47	1.87	1.46	< 0.1	41	69.9	237	2.46	4.0	20.3	0.6	1.5	0.3	70	< 0.05	1.54	7.4	0.46	0.28
E832006	14	76.4	2.18	0.63	7.26	1.58	1.99	0.1	72	89.0	455	4.09	4.4	119	1.0	1.3	0.4	60	< 0.05	6.25	22.2	0.78	0.66
E832007	9	15.7	2.16	0.83	6.29	1.31	2.08	0.1	83	139	506	3.43	4.1	34.5	1.1	1.2	0.4	60	< 0.05	1.74	10.1	0.63	0.25
E832008	9	13.0	2.32	0.68	6.30	1.38	1.93	< 0.1	67	139	422	2.58	3.2	26.1	0.8	1.0	0.3	50	< 0.05	1.73	8.1	0.60	0.20
E832009	18	96.7	1.68	1.78	5.10	0.87	2.37	0.5	220	308	1210	10.1	8.0	371	2.0	1.8	0.7	50	< 0.05	5.64	32.2	1.00	0.68
E832010	5	6.3	1.46	1.26	5.71	2.29	2.68	< 0.1	86	73.0	542	3.39	1.2	25.9	1.3	1.2	0.5	40	1.08	19.4	16.1	0.71	0.83
E832011	4	26.1	2.25	0.74	6.64	1.53	2.09	< 0.1	62	80.0	495	3.10	4.4	34.5	0.9	1.2	0.4	60	< 0.05	2.30	11.1	0.65	0.21
E832312	< 1	31.6	2.24	1.12	6.76	1.56	1.99	< 0.1	65	99.0	458	3.43	2.4	58.9	1.0	1.2	0.3	90	< 0.05	2.07	13.0	0.63	0.30
E832013	< 1	48.1	2.16	1.51	7.44	1.51	2.59	< 0.1	57	84.7	681	4.34	3.0	50.7	2.1	1.5	0.8	50	< 0.05	3.05	17.7	1.17	0.29
E832014	< 1	31.7	2.52	0.64	7.35	1.77	1.91	< 0.1	47	74.1	396	2.54	5.0	35.6	0.8	1.3	0.3	50	< 0.05	2.29	10.0	0.64	0.21
E832315	< 1	92.5	2.62	1.38	7.99	1.06	2.11	< 0.1	78	65.8	454	3.74	4.0	54.1	0.9	1.3	0.3	50	< 0.05	3.59	16.9	0.64	0.26
E832016	< 1	95.5	2.41	2.24	8.41	0.90	2.58	< 0.1	78	75.8	467	3.42	3.2	84.4	1.1	1.0	0.4	50	< 0.05	6.00	16.1	0.51	0.64
E832017	< 1	32.2	2.33	0.73	7.89	1.45	1.78	< 0.1	63	71.5	425	3.68	3.8	29.6	0.9	1.3	0.4	100	< 0.05	2.60	10.0	0.52	0.36
E832318	< 1	38.6	2.26	0.73	8.14	1.55	1.81	< 0.1	72	67.4	395	3.67	3.3	44.3	0.9	1.5	0.4	60	< 0.05	1.94	14.9	0.72	0.25
E832019	2	38.7	0.53	9.43	4.14	0.31	3.91	0.1	141	2010	1080	9.93	0.9	831	1.4	0.6	0.5	60	0.09	7.69	89.5	1.10	0.13
E832020	3	23.5	2.62	0.25	6.03	2.78	0.96	< 0.1	26	34.4	383	3.14	7.1	7.2	0.6	1.3	0.3	50	< 0.05	1.39	9.0	0.47	0.08
E832021	< 1	44.0	1.72	1.58	6.86	1.37	1.62	< 0.1	82	108	2590	6.47	1.3	36.8	0.6	1.3	0.3	60	< 0.05	4.39	23.0	0.48	0.32
E832022	1	25.6	2.32	0.65	7.38	1.74	1.85	< 0.1	56	73.0	389	2.87	3.5	47.0	0.8	1.2	0.3	50	< 0.05	1.98	14.1	0.58	0.23
E832023	< 1	43.0	1.97	1.25	7.40	1.46	2.03	< 0.1	83	123	551	4.26	3.7	48.3	1.0	1.2	0.4	60	< 0.05	3.16	15.3	0.55	0.34
E832024	< 1	17.6	2.53	0.72	7.29	1.61	2.08	< 0.1	55	74.5	437	3.02	3.4	43.0	0.8	1.2	0.4	40	< 0.05	1.28	11.7	0.63	0.22
E832025	< 1	25.4	2.20	0.65	7.81	1.49	1.85	< 0.1	41	65.1	385	3.01	3.1	31.6	0.8	1.2	0.3	40	< 0.05	1.70	9.0	0.60	0.30
E832026	< 1	26.6	2.18	3.04	8.15	0.39	3.62	< 0.1	272	241	1480	10.2	2.2	147	2.9	1.3	1.0	40	< 0.05	2.49	46.3	0.74	0.18
E832027	< 1	18.6	2.58	0.70	7.11	1.81	1.95	< 0.1	57	71.1	397	3.11	3.5	32.7	0.8	1.3	0.3	60	< 0.05	1.66	10.1	0.53	0.21
E832028	< 1	106	1.05	2.64	7.17	0.92	2.05	1.0	108	375	1540	6.07	1.7	222	1.2	1.3	0.5	30	< 0.05	4.23	42.9	0.58	0.31
E832029	< 1	37.2	2.34	0.81	7.05	1.52	2.04	< 0.1	43	70.2	548	3.27	4.8	34.2	1.2	1.2	0.4	30	< 0.05	2.49	12.4	0.79	0.20
E832030	3	5.6	1.34	1.08	4.05	2.32	2.43	< 0.1	84	82.6	535	3.22	1.2	25.1	1.0	0.8	0.4	20	1.04	17.8	15.8	0.52	0.62
E832031	6	36.9	2.30	1.06	6.93	1.54	2.19	< 0.1	74	156	660	3.96	6.8	40.1	1.1	1.2	0.5	40	< 0.05	2.52	14.7	0.79	0.21
E832032	5	53.2	2.31	0.67	7.17	1.58	2.01	0.1	64	64.6	454	3.34	4.2	48.7	1.0	1.3	0.4	30	< 0.05	2.74	12.4	0.74	0.20
E832033	< 1	37.9	2.12	0.64	7.84	1.68	1.49	< 0.1	70	104	401	3.95	5.4	56.0	0.9	1.5	0.4	70	< 0.05	3.38	15.0	0.64	0.23
GXR-1 Meas	< 1	7.1	0.04	0.20	1.81	0.04	0.78	2.5	70	14.2	797	22.3	0.4	36.1		0.9		3160	27.2	2.61	7.4	0.57	1170
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	11.5	0.51	1.68	6.10	2.65	0.85	0.5	82	43.7	149	3.08	1.1	37.6		2.2		100	3.11	2.42	14.9	1.49	16.6
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	33.8	1.45	0.77	8.15	2.80	0.88		29	38.6	823	4.32	0.6	32.6	3.2	3.0	1.1	50		4.04	17.7	1.52	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	36.4	0.09	0.60	> 10.0	1.90	0.15	< 0.1	101	47.0	981	5.19	1.6	24.6		1.2		100	0.22	4.05	13.7	0.59	0.21
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
DNC-1a Meas		4.5							140	138				253							56.0	0.55	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		164						0.4	207	93.0			2.7	81.1	3.4	3.3	1.2			8.21	22.2	1.75	0.62
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.9	0.09	0.23	7.42	0.43	0.18		90	481	501	13.7	1.4	227	1.2	0.9	0.5			3.88	30.1	0.63	0.47
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549		14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		18.3						4.7	24	36.2			0.6	46.3	2.5	7.1	0.8	1140		1.73	13.9	1.22	0.88
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
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OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832001 Orig	6	49.3	2.03	0.71	5.86	1.27	2.72	0.3	79	65.0	610	4.43	0.5	22.7	1.4	1.1	0.6	60	< 0.05	3.62	11.7	0.81	0.37
E832001 Dup	5	48.1	1.95	0.71	5.90	1.26	2.63	< 0.1	79	86.3	598	4.40	0.2	20.6	1.6	1.1	0.7	60	< 0.05	3.52	11.1	0.80	0.38

Results

Activation Laboratories Ltd.

Report: A17-13833

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832007 Orig																							
E832007 Dup																							
E832033 Orig																							
E832033 Dup																							
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.8	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.11
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.4	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	0.04
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.7	5	< 0.01	< 0.1	0.7	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.05
Method Blank																							
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	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832001	0.3	72.0	16.3	8.9	72.9	14.9	80	4.2	0.54	< 0.1	1	< 0.1	< 0.1	382	28.8	59.8	5.6	20.1	4.1	3.6	0.4	2.1	15.3
E832002	0.2	124	17.6	10.6	82.0	16.5	80	2.4	0.66	< 0.1	< 1	< 0.1	< 0.1	416	32.6	66.8	6.9	22.4	3.4	3.7	0.5	3.1	30.1
E832003	0.4	30.1	17.0	1.8	52.6	7.1	121	5.6	0.58	< 0.1	< 1	0.1	< 0.1	479	8.9	18.6	2.1	7.8	1.1	1.6	0.2	1.2	10.8
E832004	0.5	29.5	15.1	1.8	50.1	7.5	159	6.0	0.35	< 0.1	< 1	0.1	< 0.1	531	15.7	29.7	3.0	9.8	2.5	1.8	0.3	1.3	18.2
E832005	0.7	28.8	15.7	2.3	45.7	6.1	163	6.5	0.45	< 0.1	< 1	0.1	< 0.1	528	8.4	17.2	1.8	6.8	1.1	1.3	0.2	1.2	14.5
E832006	0.3	89.3	22.0	9.4	53.9	11.3	181	0.5	0.35	< 0.1	1	< 0.1	< 0.1	464	19.5	45.6	4.5	16.6	3.0	3.0	0.4	2.1	32.9
E832007	0.4	33.4	18.6	2.1	39.5	9.7	159	1.2	0.35	< 0.1	1	< 0.1	< 0.1	367	11.1	22.6	2.6	10.2	2.4	2.2	0.3	1.8	3.0
E832008	0.1	27.7	16.6	1.2	42.2	8.6	133	2.9	1.21	< 0.1	1	< 0.1	< 0.1	401	14.2	26.6	2.9	10.7	1.6	2.0	0.3	1.4	6.0
E832009	0.8	91.3	19.9	104	17.2	16.6	334	18.1	0.88	< 0.1	2	0.6	< 0.1	260	39.1	78.9	9.5	31.8	5.8	4.7	0.6	3.3	297
E832010	< 0.1	45.7	15.7	6.3	572	12.9	46	< 0.1	2.96	< 0.1	< 1	< 0.1	< 0.1	51	3.9	9.6	1.1	6.4	1.5	2.8	0.4	2.5	33.9
E832011	0.2	46.0	15.6	< 0.1	54.1	9.6	186	1.5	0.68	< 0.1	< 1	< 0.1	< 0.1	443	16.8	34.1	3.7	12.9	2.1	2.5	0.3	1.6	9.1
E832312	< 0.1	48.9	15.7	2.4	56.8	9.1	110	1.2	0.44	< 0.1	< 1	< 0.1	< 0.1	452	15.7	32.3	3.3	12.4	1.5	2.5	0.3	1.7	13.4
E832013	< 0.1	76.2	20.3	0.9	60.1	19.1	125	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	456	17.8	43.9	5.6	22.9	5.8	5.3	0.6	3.8	22.9
E832014	0.3	33.8	16.5	< 0.1	53.5	9.0	207	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	533	11.5	22.7	2.8	9.4	2.8	2.0	0.2	1.4	6.0
E832315	0.2	44.8	18.7	1.2	32.2	8.1	165	1.7	0.41	< 0.1	< 1	< 0.1	< 0.1	307	12.3	25.2	2.9	10.4	1.3	2.2	0.3	1.4	23.5
E832016	< 0.1	43.3	20.7	0.4	28.3	10.6	132	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	225	5.0	9.4	0.9	4.0	0.9	1.5	0.2	1.8	10.6
E832017	0.2	43.1	21.6	2.8	48.0	9.7	159	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	456	9.1	18.8	1.9	8.0	1.2	1.9	0.2	1.4	13.2
E832318	0.6	34.3	17.0	4.2	48.3	8.9	132	4.9	0.52	< 0.1	< 1	< 0.1	< 0.1	436	16.7	31.4	3.2	12.3	1.5	2.0	0.3	1.4	47.1
E832019	0.5	69.6	9.4	2.3	11.9	14.4	35	0.1	0.14	< 0.1	< 1	0.1	< 0.1	120	20.9	26.9	4.5	16.3	2.9	3.6	0.4	2.5	145
E832020	0.3	54.8	17.9	< 0.1	99.6	6.4	287	8.3	2.01	< 0.1	2	0.1	< 0.1	881	32.4	88.3	8.2	27.6	4.4	3.7	0.3	1.5	15.5
E832021	0.4	59.8	16.8	29.0	53.8	7.2	75	3.0	0.86	< 0.1	< 1	0.4	< 0.1	388	10.7	22.6	2.1	7.8	1.8	1.5	0.2	1.2	14.9

Results

Activation Laboratories Ltd.

Report: A17-13833

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832022	0.3	29.1	14.7	13.7	52.8	8.8	146	3.0	0.39	< 0.1	< 1	< 0.1	< 0.1	481	10.5	21.2	2.2	8.5	2.1	1.8	0.2	1.6	23.3
E832023	0.2	41.1	17.3	13.2	50.1	9.9	154	< 0.1	0.13	< 0.1	< 1	< 0.1	< 0.1	376	10.7	20.8	2.2	8.3	1.7	1.7	0.3	1.8	20.5
E832024	0.2	22.9	13.8	9.1	43.4	8.8	139	3.5	0.27	< 0.1	< 1	< 0.1	< 0.1	428	10.7	21.4	2.4	9.2	1.4	1.7	0.2	1.5	19.8
E832025	0.2	30.3	18.7	3.3	41.8	8.5	128	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	409	11.7	22.1	2.4	8.4	2.2	1.8	0.3	1.5	15.9
E832026	< 0.1	119	20.3	40.3	21.9	23.7	84	1.0	0.56	< 0.1	< 1	< 0.1	< 0.1	110	3.7	7.5	0.7	3.7	1.7	2.7	0.5	4.0	141
E832027	0.2	24.4	16.6	4.0	54.2	7.7	145	0.6	0.07	< 0.1	< 1	< 0.1	< 0.1	484	9.0	18.5	1.8	7.2	1.5	1.4	0.2	1.4	11.5
E832028	< 0.1	239	19.4	31.4	37.9	12.0	67	0.4	0.09	< 0.1	< 1	< 0.1	< 0.1	263	13.5	28.6	2.7	10.3	2.0	2.4	0.3	2.2	102
E832029	0.1	47.5	17.0	< 0.1	56.3	11.2	201	0.3	< 0.05	< 0.1	< 1	< 0.1	< 0.1	436	13.6	29.2	3.2	13.0	2.4	2.6	0.3	2.0	10.7
E832030	0.3	43.8	14.7	7.7	411	8.7	48	0.8	2.86	< 0.1	< 1	0.4	< 0.1	52	2.3	5.7	0.7	3.9	1.2	1.8	0.3	1.8	30.9
E832031	< 0.1	44.9	17.4	0.3	53.9	12.0	300	0.2	0.22	< 0.1	< 1	< 0.1	< 0.1	432	16.1	34.2	3.9	14.2	3.0	2.7	0.3	2.3	8.0
E832032	< 0.1	39.5	16.0	1.2	51.2	10.1	176	0.5	0.26	< 0.1	< 1	< 0.1	< 0.1	489	16.7	42.4	3.8	13.5	2.4	2.3	0.3	1.8	14.8
E832033	0.4	36.1	17.1	1.6	51.2	9.8	226	0.2	0.89	< 0.1	2	< 0.1	< 0.1	461	17.8	36.1	4.0	14.3	3.2	2.7	0.3	1.9	25.4
GXR-1 Meas	13.8	782	8.3	386	2.4	25.4	17	0.6	15.5	0.8	21	21.5	6.7	611	6.8	13.6		7.4	2.6	3.9	0.6	4.2	1080
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.4	67.0	17.1	100	111	12.5	36	8.7	306	0.2	6	4.3	0.8	94	55.5	106		38.3	5.9	4.9	0.5	2.3	5860
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		102	19.7	< 0.1	110		24	< 0.1			< 1	< 0.1		605	38.9	83.7		36.2	7.8	7.0	0.9	5.5	29.6
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	0.4	125	27.6	216	71.9	11.1	57	< 0.1	0.25	< 0.1	< 1	0.1	< 0.1	1330	11.8	32.9		11.4	2.3	2.3	0.3	2.0	78.1
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		63.4	13.1		3.2	14.6	35	1.3					0.8	100	3.5			4.6					93.7
DNC-1a Cert		70	15		5	18.0	38.0	3					0.96	118	3.6			5.20					100
SBC-1 Meas		186	25.3	24.0	135	29.7	109	11.7	2.11		3	1.0		545	49.6	105	12.0	44.0	10.0	8.0	1.0	6.1	28.6
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		42.7	21.2	5.1	39.6	10.6	56	0.1	0.26	< 0.1	< 1	< 0.1		181	16.4	35.4	3.6	13.2	2.1	3.0	0.4	2.0	369
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		814	16.3		117	21.9	43	3.3	11.0					966	40.7	86.5	9.2	32.8	6.2	5.2	0.7	4.2	237
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
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OREAS 223 (Fire Assay) Meas																							



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832001	< 0.1	0.2	1.5	0.2	< 0.1	237	1.1	< 0.001	0.42	20.7	11.3	3.4	< 0.005
E832002	< 0.1	0.2	1.5	0.3	< 0.1	242	0.2	< 0.001	0.46	23.3	16.9	4.3	0.006
E832003	< 0.1	0.1	0.8	0.1	0.3	272	0.4	< 0.001	0.30	18.8	4.8	1.0	< 0.005
E832004	< 0.1	0.1	0.8	0.1	0.4	264	0.6	< 0.001	0.33	20.0	9.8	1.3	< 0.005
E832005	< 0.1	< 0.1	0.7	0.1	0.5	236	0.7	< 0.001	0.32	19.8	5.9	1.2	< 0.005
E832006	< 0.1	0.2	1.2	0.2	< 0.1	236	< 0.1	< 0.001	0.53	27.9	11.5	2.4	< 0.005
E832007	< 0.1	0.1	1.1	0.2	< 0.1	215	< 0.1	< 0.001	0.23	13.5	4.1	0.8	< 0.005
E832008	< 0.1	0.1	0.9	0.1	< 0.1	236	0.2	0.005	0.24	14.4	5.9	0.9	< 0.005
E832009	1.0	0.3	2.4	0.4	2.6	135	2.2	< 0.001	0.47	22.0	13.8	2.1	0.050
E832010	< 0.1	0.2	1.2	0.2	< 0.1	94.9	< 0.1	0.002	5.47	9.0	0.7	0.2	3.13
E832011	< 0.1	0.1	0.9	0.1	< 0.1	258	< 0.1	0.005	0.33	14.9	6.9	1.6	< 0.005
E832312	< 0.1	0.1	0.9	0.1	< 0.1	245	< 0.1	< 0.001	0.34	14.1	4.7	1.1	< 0.005
E832013	< 0.1	0.2	1.7	0.2	< 0.1	269	< 0.1	< 0.001	0.32	16.1	6.5	1.3	< 0.005
E832014	< 0.1	0.1	0.9	0.2	< 0.1	288	< 0.1	< 0.001	0.33	16.8	4.0	1.2	< 0.005
E832315	< 0.1	0.1	0.9	0.1	0.1	245	0.2	< 0.001	0.20	15.4	4.4	1.2	< 0.005
E832016	< 0.1	0.2	1.2	0.2	< 0.1	203	< 0.1	< 0.001	0.20	13.0	3.5	1.2	< 0.005
E832017	< 0.1	0.1	1.1	0.2	< 0.1	218	< 0.1	< 0.001	0.34	14.9	5.3	1.5	< 0.005
E832318	< 0.1	0.1	0.9	0.2	< 0.1	240	0.4	< 0.001	0.31	17.2	5.6	1.3	< 0.005
E832019	< 0.1	0.2	1.2	0.2	< 0.1	50.4	< 0.1	< 0.001	0.28	4.6	5.3	1.5	0.010
E832020	0.5	< 0.1	0.5	< 0.1	0.5	185	15.5	< 0.001	0.93	39.0	26.5	1.8	< 0.005
E832021	< 0.1	0.1	0.8	< 0.1	< 0.1	177	0.4	< 0.001	0.32	17.3	5.9	1.1	0.375
E832022	< 0.1	0.1	0.9	0.2	< 0.1	252	0.3	< 0.001	0.30	15.8	4.1	1.0	< 0.005
E832023	< 0.1	0.2	1.2	0.2	< 0.1	200	< 0.1	< 0.001	0.30	15.3	5.1	1.3	0.017
E832024	< 0.1	0.1	1.0	0.2	< 0.1	249	0.3	< 0.001	0.26	13.6	5.1	0.9	< 0.005
E832025	< 0.1	0.1	0.9	0.1	< 0.1	227	< 0.1	< 0.001	0.28	16.9	5.8	1.5	0.064
E832026	0.2	0.4	2.5	0.4	< 0.1	98.2	0.4	0.003	0.28	8.7	0.9	0.3	0.094
E832027	< 0.1	0.1	0.8	0.1	< 0.1	262	0.3	< 0.001	0.31	15.2	3.2	1.3	< 0.005
E832028	0.1	0.2	1.3	0.2	< 0.1	131	< 0.1	< 0.001	0.29	18.3	6.1	1.0	< 0.005
E832029	< 0.1	0.2	1.1	0.2	< 0.1	267	< 0.1	< 0.001	0.30	14.2	4.7	1.2	< 0.005
E832030	1.1	0.1	0.9	0.1	< 0.1	76.6	3.3	< 0.001	4.99	8.1	0.3	0.1	3.13
E832031	< 0.1	0.2	1.3	0.2	< 0.1	270	< 0.1	< 0.001	0.31	14.6	6.5	1.6	< 0.005
E832032	< 0.1	0.2	1.0	0.1	< 0.1	264	< 0.1	< 0.001	0.33	14.7	6.0	1.6	< 0.005
E832033	< 0.1	0.2	1.0	0.2	< 0.1	233	< 0.1	0.002	0.33	16.6	8.7	1.7	< 0.005
GXR-1 Meas		0.3	1.9	0.3	< 0.1	276	111		0.36	743	2.1	30.5	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2080	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	0.9	0.1	0.5	207	33.2		3.02	49.4	18.2	5.4	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.5	2.9		< 0.1	172	< 0.1		0.59	23.6	10.5	2.6	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.4	0.3	< 0.1	39.3	< 0.1		2.04	100	4.6	1.3	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
DNC-1a Meas			1.7			142				6.2			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.0	0.5	0.6	184	1.2		0.88	35.7	14.6	5.4	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.3	0.2	< 0.1	30.4	< 0.1		0.26	22.1	13.8	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.3	0.4	0.1	131	0.3			767	11.1	2.0	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.71
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.72
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.71
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.73
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.506
OREAS 218 Cert													0.531
OREAS 218 Meas													0.525
OREAS 218 Cert													0.531
OREAS 218 Meas													0.520
OREAS 218 Cert													0.531
OREAS 218 Meas													0.530
OREAS 218 Cert													0.531
OREAS 218 Meas													0.533
OREAS 218 Cert													0.531
OREAS 218 Meas													0.541
OREAS 218 Cert													0.531
E832001 Orig	< 0.1	0.2	1.5	0.2	< 0.1	237	1.1	< 0.001	0.42	20.7	11.3	3.4	
E832001 Dup	< 0.1	0.2	1.8	0.3	< 0.1	241	0.9	< 0.001	0.38	20.9	17.7	5.2	



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832007 Orig													< 0.005
E832007 Dup													< 0.005
E832033 Orig													< 0.005
E832033 Dup													< 0.005
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	0.11	0.6	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005



**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13834  
**Invoice Date:** 08-Jan-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

37 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-13834**

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva". The signature is written in a cursive style with a horizontal line underneath.

Elitsa Hrischeva, 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

**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13834  
**Invoice Date:** 08-Jan-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

37 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-13834**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6  
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E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

## Results

## Activation Laboratories Ltd.

## Report: A17-13834

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832301	14	0.7	0.03	0.25	0.27	0.04	3.71	0.2	6	10.0	169	0.42	< 0.1	8.3	0.1	< 0.1	< 0.1	80	< 0.05	0.24	1.8	0.06	0.16
E832302	10	1.2	0.04	0.19	0.38	0.07	2.93	0.2	5	9.6	227	0.32	< 0.1	4.7	0.1	< 0.1	< 0.1	70	< 0.05	0.40	1.0	0.07	0.15
E832303	11	0.7	0.03	0.18	0.24	0.05	2.86	0.1	4	7.3	174	0.30	0.1	3.4	0.1	< 0.1	< 0.1	60	< 0.05	0.28	0.7	0.06	0.14
E832304	10	0.6	0.03	0.12	0.56	0.04	2.39	< 0.1	3	5.3	56	0.10	< 0.1	3.6	< 0.1	< 0.1	< 0.1	60	< 0.05	0.24	0.5	< 0.05	0.19
E832305	4	0.8	0.04	0.07	0.15	0.03	0.88	< 0.1	2	11.2	39	0.06	< 0.1	4.3	< 0.1	< 0.1	< 0.1	50	< 0.05	0.06	0.6	< 0.05	0.12
E832306	3	0.6	0.03	0.03	0.17	0.03	0.65	0.1	2	8.1	27	0.05	< 0.1	3.8	< 0.1	< 0.1	< 0.1	60	< 0.05	0.08	0.6	< 0.05	0.12
E832307	34	0.6	0.03	0.36	0.22	0.04	5.34	0.2	5	7.7	24	0.17	< 0.1	13.7	< 0.1	< 0.1	< 0.1	50	< 0.05	0.19	0.6	0.05	0.11
E832308	26	0.6	0.03	0.28	0.17	0.05	3.95	< 0.1	2	5.7	181	0.25	< 0.1	3.1	< 0.1	< 0.1	< 0.1	50	< 0.05	0.21	0.2	< 0.05	0.12
E832309	18	0.7	0.02	0.24	0.18	0.03	3.46	< 0.1	3	6.1	102	0.27	< 0.1	1.8	< 0.1	< 0.1	< 0.1	50	< 0.05	0.20	0.5	< 0.05	0.10
E832310	2	6.6	1.52	1.27	5.12	1.64	2.71	< 0.1	73	71.2	508	3.21	1.3	24.7	1.3	0.9	0.5	30	0.96	17.8	14.5	0.64	1.36
E832311	18	0.8	0.04	0.28	0.22	0.05	4.23	0.2	4	7.0	198	0.16	< 0.1	3.9	< 0.1	< 0.1	< 0.1	40	< 0.05	0.25	0.5	< 0.05	0.11
E832312	20	< 0.5	0.03	0.28	0.13	0.03	4.08	< 0.1	2	5.6	225	0.09	< 0.1	2.0	< 0.1	< 0.1	< 0.1	50	< 0.05	0.11	0.3	< 0.05	0.11
E832313	27	0.8	0.03	0.32	0.19	0.05	4.79	< 0.1	3	7.2	414	0.14	< 0.1	1.3	< 0.1	< 0.1	< 0.1	30	< 0.05	0.16	0.4	< 0.05	0.12
E832314	9	0.8	0.04	0.14	0.29	0.05	2.90	0.2	4	5.1	164	0.20	0.2	4.0	0.1	< 0.1	< 0.1	50	< 0.05	0.23	1.0	0.06	0.11
E832315	9	0.9	0.04	0.09	0.19	0.17	2.81	< 0.1	3	5.3	50	0.76	< 0.1	4.5	< 0.1	< 0.1	< 0.1	70	< 0.05	0.30	0.5	< 0.05	0.12
E832316	10	0.8	0.03	0.10	0.25	0.07	4.27	< 0.1	3	5.8	107	0.10	< 0.1	14.3	0.2	< 0.1	< 0.1	70	< 0.05	0.23	0.7	0.07	0.11
E832317	13	0.8	0.03	0.10	0.62	0.11	4.78	1.5	10	10.8	1090	0.33	< 0.1	59.1	0.8	0.1	0.3	110	0.06	0.24	4.1	0.48	0.18
E832318	16	0.7	0.03	0.23	0.17	0.06	3.23	0.1	3	16.3	1660	0.37	< 0.1	1.3	< 0.1	< 0.1	< 0.1	80	< 0.05	0.22	0.7	< 0.05	0.13
E832319	21	0.7	0.03	0.23	0.16	0.04	3.46	< 0.1	3	8.1	726	0.77	< 0.1	3.3	< 0.1	< 0.1	< 0.1	50	< 0.05	0.21	1.3	< 0.05	0.11
E832320	2	19.3	2.29	0.17	3.64	1.41	0.79	< 0.1	31	21.4	265	2.02	16.1	17.0	1.4	0.9	0.6	< 10	< 0.05	1.08	81.8	0.65	0.13
E832321	16	0.9	0.03	0.23	0.24	0.05	3.52	< 0.1	3	9.4	109	0.15	< 0.1	1.2	0.1	< 0.1	< 0.1	50	< 0.05	0.45	0.3	< 0.05	0.11
E832322	18	0.7	0.03	0.25	0.23	0.06	3.51	< 0.1	3	7.6	101	0.10	< 0.1	1.4	< 0.1	< 0.1	< 0.1	40	< 0.05	0.34	0.2	< 0.05	0.10
E832323	19	1.1	0.03	0.32	0.30	0.07	4.75	< 0.1	4	4.8	130	0.12	< 0.1	1.8	0.1	< 0.1	< 0.1	80	< 0.05	0.48	0.2	< 0.05	0.11
E832324	13	0.6	0.03	0.25	0.15	0.05	3.54	< 0.1	2	8.5	228	0.10	< 0.1	1.6	< 0.1	< 0.1	< 0.1	30	< 0.05	0.27	0.5	< 0.05	0.11
E832325	6	< 0.5	0.02	0.26	0.12	0.03	3.62	< 0.1	2	6.0	178	0.11	< 0.1	3.7	< 0.1	< 0.1	< 0.1	20	< 0.05	0.19	0.4	< 0.05	0.08
E832326	7	0.6	0.02	0.24	0.29	0.04	3.51	0.1	4	12.2	977	0.56	0.1	15.9	0.2	< 0.1	< 0.1	50	< 0.05	0.38	1.8	0.08	0.12
E832327	2	0.8	0.04	0.08	0.31	0.05	2.30	0.2	5	13.5	123	0.11	< 0.1	4.4	0.1	< 0.1	< 0.1	40	< 0.05	0.31	1.1	0.05	0.11
E832328	< 1	1.6	0.07	0.14	2.31	0.10	4.17	0.3	18	28.3	99	0.84	0.2	35.8	3.0	0.8	1.1	100	0.19	0.36	3.3	2.03	0.15
E832329	6	0.8	0.03	0.09	0.45	0.05	3.61	0.2	5	13.8	319	0.57	0.2	13.1	0.2	< 0.1	< 0.1	40	< 0.05	0.31	5.0	0.12	0.10
E832330	< 1	6.2	1.49	1.14	3.16	1.18	2.66	< 0.1	93	81.9	511	3.16	1.4	25.0	0.8	0.8	0.3	30	1.05	16.6	14.1	0.31	1.13
E832331	7	1.1	0.04	0.09	0.77	0.07	3.01	0.4	20	13.5	830	0.92	0.2	11.6	0.8	0.2	0.3	120	< 0.05	0.43	6.0	0.47	0.17
E832332	12	0.9	0.04	0.11	0.36	0.06	3.35	0.2	5	9.5	182	0.29	0.2	6.0	0.1	< 0.1	< 0.1	50	0.09	0.32	1.0	0.07	0.12
E832333	17	0.8	0.03	0.10	0.32	0.05	2.88	0.1	3	8.3	91	0.24	< 0.1	3.2	< 0.1	< 0.1	< 0.1	50	< 0.05	0.20	0.5	< 0.05	0.12
E832334	10	0.7	0.03	0.12	0.28	0.05	2.22	0.1	4	16.4	137	0.13	< 0.1	4.4	0.1	< 0.1	< 0.1	60	< 0.05	0.27	0.5	0.05	0.11
E832335	7	0.8	0.03	0.20	0.28	0.05	3.38	0.1	4	22.2	244	0.34	0.1	4.3	0.1	< 0.1	< 0.1	40	< 0.05	0.27	0.9	< 0.05	0.11
E832336	4	0.5	0.02	0.14	0.17	0.03	2.60	< 0.1	3	5.6	148	0.30	< 0.1	2.1	< 0.1	< 0.1	< 0.1	30	< 0.05	0.14	0.7	< 0.05	0.08
E832337	4	0.6	0.02	0.27	0.35	0.03	4.38	0.2	5	17.3	202	0.36	0.1	5.0	0.1	< 0.1	< 0.1	40	< 0.05	0.16	0.8	0.05	0.11
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	12.1	0.55	1.77	6.73	3.49	0.96	0.2	86	36.0	152	3.11	1.2	38.6		2.0		70	3.26	2.52	13.8	1.34	18.6
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	35.3	1.49	0.95	7.10	2.49	0.86		31	38.3	770	4.25	0.8	31.1	3.2	2.6	1.1	40		3.58	15.2	1.32	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	12	37.6	0.09	0.59	> 10.0	1.77	0.15	0.1	141	57.8	952	5.06	2.5	22.4		1.0		30	0.12	3.96	12.5	0.60	0.27
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		5.0							144	137											55.4	0.55	
DNC-1a Cert		5.2							148	270											57	0.59	
SBC-1 Meas		187						0.3	216	114			3.5	86.1	3.6	3.3	1.2			7.70	22.6	1.78	0.73
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		23.7	0.09	0.24	7.92	0.41	0.17		88	492	482	14.5	1.3	233	1.3	0.7	0.5			3.66	29.1	0.60	0.96
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		17.2						4.7	22	33.3			2.0	44.6	2.4	6.3	0.9	920		1.66	11.7	1.21	0.99
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832301 Orig	14	0.7	0.03	0.25	0.27	0.04	3.71	0.2	6	10.0	169	0.42	< 0.1	8.3	0.1	< 0.1	< 0.1	80	< 0.05	0.24	1.8	0.06	0.16
E832301 Dup	15	0.7	0.03	0.24	0.27	0.04	3.55	0.2	6	12.8	168	0.41	0.1	8.2	0.1	0.1	< 0.1	70	< 0.05	0.21	1.5	0.07	0.13
Method Blank	10	< 0.5	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.1	< 1	6.0	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	0.07
Method Blank	10	< 0.5	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.1	< 1	6.0	4	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	20	< 0.05	< 0.05	< 0.1	< 0.05	0.07
Method Blank	10	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	7.7	3	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	0.06
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832301	0.6	8.6	0.4	0.2	2.0	1.3	4	0.4	2.91	< 0.1	< 1	< 0.1	< 0.1	73	3.0	5.0	0.6	2.1	0.3	0.3	< 0.1	0.3	10.4
E832302	0.6	20.1	0.8	3.1	3.3	1.4	4	0.8	1.00	< 0.1	< 1	< 0.1	< 0.1	68	2.2	4.4	0.5	1.8	0.4	0.3	< 0.1	0.2	4.9
E832303	0.5	11.6	0.5	1.7	2.2	1.0	4	0.5	0.46	< 0.1	< 1	< 0.1	< 0.1	66	1.6	3.0	0.4	1.3	0.2	0.2	< 0.1	0.2	7.1
E832304	0.1	15.0	0.5	1.5	2.4	0.8	< 1	0.4	0.22	< 0.1	< 1	< 0.1	< 0.1	48	1.3	3.0	0.3	1.1	0.3	0.2	< 0.1	0.1	5.3
E832305	< 0.1	13.3	0.3	1.7	1.1	0.4	< 1	0.1	0.44	< 0.1	< 1	< 0.1	< 0.1	19	0.6	1.1	0.1	0.4	0.1	< 0.1	< 0.1	< 0.1	2.2
E832306	< 0.1	7.6	0.4	0.7	1.2	0.6	< 1	0.3	0.26	< 0.1	< 1	< 0.1	< 0.1	30	1.0	1.8	0.2	0.7	0.2	0.1	< 0.1	0.1	3.2

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832307	2.9	14.3	0.1	27.0	1.4	1.0	4	0.3	9.29	< 0.1	< 1	0.5	< 0.1	91	2.1	2.9	0.4	1.6	0.2	0.2	< 0.1	0.2	10.4
E832308	0.2	13.5	0.1	2.8	1.9	0.5	4	0.3	5.19	< 0.1	< 1	< 0.1	< 0.1	78	0.9	1.7	0.2	0.7	0.2	0.1	< 0.1	0.1	2.4
E832309	< 0.1	6.4	0.2	1.7	1.5	0.4	3	0.2	1.68	< 0.1	< 1	< 0.1	< 0.1	62	0.8	1.4	0.1	0.6	< 0.1	0.1	< 0.1	< 0.1	2.7
E832310	< 0.1	49.4	14.1	5.9	509	11.9	49	< 0.1	1.44	< 0.1	< 1	< 0.1	< 0.1	53	3.8	9.0	1.3	5.8	1.9	2.2	0.4	2.4	33.6
E832311	0.3	13.6	0.4	0.9	2.4	0.7	3	0.4	1.85	< 0.1	< 1	< 0.1	< 0.1	74	1.1	2.3	0.3	0.9	0.2	0.2	< 0.1	0.1	4.1
E832312	0.2	6.4	0.2	0.3	1.3	0.5	2	0.2	3.15	< 0.1	< 1	< 0.1	< 0.1	69	0.7	1.4	0.2	0.6	< 0.1	0.1	< 0.1	< 0.1	2.0
E832313	0.5	7.0	0.2	3.0	2.0	0.6	2	0.3	1.83	< 0.1	< 1	< 0.1	< 0.1	103	1.0	2.0	0.2	0.9	0.1	0.1	< 0.1	0.1	4.0
E832314	0.6	13.1	0.6	1.4	2.3	1.1	7	0.6	0.40	< 0.1	< 1	< 0.1	< 0.1	74	1.6	3.2	0.4	1.4	0.2	0.2	< 0.1	0.2	7.8
E832315	< 0.1	12.3	0.2	1.7	6.9	0.7	3	0.3	0.42	< 0.1	< 1	< 0.1	< 0.1	86	1.3	2.1	0.3	0.9	0.2	0.2	< 0.1	0.1	4.3
E832316	0.2	12.6	0.2	0.9	2.9	1.4	< 1	0.4	0.36	< 0.1	< 1	0.2	< 0.1	118	1.8	2.6	0.4	1.7	0.3	0.2	< 0.1	0.2	16.9
E832317	1.7	20.6	< 0.1	4.2	4.4	10.3	2	0.3	0.85	< 0.1	< 1	1.3	< 0.1	213	21.1	15.8	4.1	14.3	2.5	2.0	0.3	1.5	102
E832318	0.4	20.2	< 0.1	9.4	2.3	0.7	2	0.4	0.74	< 0.1	< 1	< 0.1	< 0.1	140	1.0	1.9	0.2	0.8	0.2	0.1	< 0.1	0.1	2.8
E832319	< 0.1	22.5	< 0.1	4.0	1.9	0.6	4	0.3	0.89	< 0.1	1	< 0.1	< 0.1	131	0.9	1.8	0.2	0.7	0.2	0.1	< 0.1	0.1	2.4
E832320	< 0.1	91.3	11.7	< 0.1	55.6	11.8	596	12.9	1.97	< 0.1	28	0.7	< 0.1	843	63.8	141	16.7	59.0	9.1	6.5	0.7	3.6	264
E832321	< 0.1	3.0	0.4	1.0	2.7	0.9	3	0.4	0.31	< 0.1	< 1	< 0.1	< 0.1	78	1.4	2.7	0.3	1.0	0.3	0.2	< 0.1	0.1	2.2
E832322	0.2	5.7	0.4	< 0.1	2.2	0.7	1	0.3	0.42	< 0.1	< 1	< 0.1	< 0.1	55	1.1	2.3	0.3	0.9	0.1	0.1	< 0.1	0.1	2.5
E832323	0.2	6.8	0.4	0.2	3.1	1.0	1	0.5	0.76	< 0.1	< 1	< 0.1	< 0.1	91	1.6	3.0	0.3	1.3	0.3	0.2	< 0.1	0.2	2.6
E832324	< 0.1	28.4	0.2	2.7	1.9	0.6	2	0.2	1.55	< 0.1	< 1	< 0.1	< 0.1	67	0.9	1.7	0.2	0.7	0.1	< 0.1	< 0.1	0.1	5.7
E832325	< 0.1	5.3	0.1	1.5	1.0	0.5	2	0.2	1.39	< 0.1	< 1	< 0.1	< 0.1	74	0.7	1.2	0.2	0.6	< 0.1	0.1	< 0.1	< 0.1	3.7
E832326	0.5	23.5	0.1	31.6	1.7	1.6	5	0.3	1.72	< 0.1	< 1	0.6	< 0.1	101	1.7	2.9	0.4	1.6	0.4	0.3	< 0.1	0.3	15.9
E832327	0.4	20.7	0.6	2.6	2.1	1.2	2	0.5	0.33	< 0.1	< 1	< 0.1	< 0.1	59	1.8	3.5	0.4	1.6	0.2	0.2	< 0.1	0.2	5.9
E832328	3.6	8.0	1.3	30.9	5.0	32.2	10	1.3	1.40	< 0.1	< 1	0.9	< 0.1	105	126	340	22.8	77.9	11.9	9.4	1.0	5.7	125
E832329	0.5	7.1	0.4	0.8	2.7	2.4	7	0.7	0.65	< 0.1	< 1	0.2	< 0.1	110	4.2	7.2	0.9	3.4	0.5	0.5	< 0.1	0.4	18.3
E832330	< 0.1	48.5	14.0	7.3	266	5.5	53	2.7	4.94	< 0.1	1	2.2	< 0.1	36	1.5	3.8	0.5	2.5	0.8	1.1	0.2	1.4	33.7
E832331	1.0	11.2	0.9	1.6	3.6	7.2	10	1.0	1.00	< 0.1	< 1	0.1	< 0.1	136	26.2	56.0	5.3	17.7	3.2	2.0	0.2	1.3	19.4
E832332	0.5	20.4	0.5	4.7	2.6	1.5	8	0.5	0.75	< 0.1	< 1	0.3	< 0.1	83	2.7	4.0	0.6	2.1	0.4	0.4	< 0.1	0.3	14.7
E832333	0.2	16.4	0.5	1.3	1.9	0.9	4	0.5	0.44	< 0.1	< 1	< 0.1	< 0.1	58	1.5	2.8	0.3	1.1	0.2	0.2	< 0.1	0.1	4.2
E832334	0.5	13.9	0.6	3.6	2.3	1.2	5	0.5	0.96	< 0.1	< 1	< 0.1	< 0.1	54	1.7	3.4	0.4	1.4	0.2	0.2	< 0.1	0.2	4.9
E832335	0.4	8.9	0.5	1.8	2.4	1.1	6	0.5	1.33	< 0.1	< 1	< 0.1	< 0.1	56	1.6	3.0	0.4	1.4	0.2	0.3	< 0.1	0.2	3.5
E832336	0.2	11.6	0.4	1.6	1.4	0.6	3	0.3	1.54	< 0.1	< 1	< 0.1	< 0.1	39	1.0	1.9	0.2	0.7	0.2	0.1	< 0.1	< 0.1	2.7
E832337	0.5	11.3	0.4	0.8	1.7	1.1	7	0.5	3.34	< 0.1	< 1	< 0.1	< 0.1	64	1.6	3.2	0.4	1.4	0.3	0.2	< 0.1	0.3	7.0
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.4	75.0	17.2	99.9	136	12.5	42	10.0	327	0.2	8	4.4	0.9	103	56.2	106		39.5	5.3	4.5	0.5	2.6	6330
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		101	18.2	< 0.1	108		29	0.1			< 1	< 0.1		627	34.2	78.4		33.3	6.4	6.1	0.9	5.4	29.1
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000
GXR-6 Meas	0.1	120	23.8	258	74.8	10.6	84	1.0	1.06	< 0.1	1	1.2	< 0.1	1420	11.5	31.8		11.4	2.5	2.3	0.3	2.2	64.8
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		66.8	13.3		3.5	15.0	38	1.4				0.8		106	3.5			4.8					97.9
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		208	25.4	24.9	85.7	28.3	123	14.7	2.64		4	1.0		518	43.7	95.1	11.1	42.9	8.0	7.6	1.1	6.2	32.5
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
OREAS 45d (4-Acid) Meas		44.9	20.7	4.3	41.5	10.4	50	< 0.1	0.18	< 0.1	< 1	< 0.1		187	16.0	34.8	3.7	13.1	2.2	2.4	0.4	2.4	368
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		766	13.6		104	21.3	83	3.1	11.0					966	41.8	90.5	9.8	35.5	5.6	5.3	0.7	4.5	223
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.00 00
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832301 Orig	0.6	8.6	0.4	0.2	2.0	1.3	4	0.4	2.91	< 0.1	< 1	< 0.1	< 0.1	73	3.0	5.0	0.6	2.1	0.3	0.3	< 0.1	0.3	10.4
E832301 Dup	0.5	9.9	0.4	0.8	2.0	1.3	6	0.6	2.72	< 0.1	< 1	< 0.1	< 0.1	71	3.0	5.0	0.6	2.1	0.3	0.3	< 0.1	0.3	9.6
Method Blank	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.09	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832301	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.8	0.1	0.001	0.05	1.4	0.6	0.8	0.025
E832302	< 0.1	< 0.1	0.2	< 0.1	< 0.1	41.8	0.2	0.001	< 0.05	2.5	0.8	0.5	0.027
E832303	< 0.1	< 0.1	0.1	< 0.1	< 0.1	43.1	< 0.1	< 0.001	< 0.05	1.1	0.5	0.2	0.011
E832304	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35.5	0.1	0.001	< 0.05	1.6	0.5	0.2	0.017
E832305	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	13.1	0.1	< 0.001	< 0.05	3.7	0.2	< 0.1	0.020
E832306	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	13.1	< 0.1	< 0.001	< 0.05	1.2	0.3	0.1	0.010
E832307	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	44.7	0.2	0.008	0.07	0.8	0.7	7.6	0.011
E832308	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	33.1	< 0.1	0.002	< 0.05	2.3	0.4	0.5	0.018
E832309	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	33.3	< 0.1	< 0.001	< 0.05	1.7	0.2	0.1	0.020
E832310	< 0.1	0.2	1.2	0.2	< 0.1	87.0	< 0.1	< 0.001	4.74	7.8	0.6	0.2	3.24
E832311	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	43.2	19.4	< 0.001	< 0.05	1.7	0.4	0.2	0.047
E832312	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	38.3	< 0.1	0.001	< 0.05	2.4	0.2	< 0.1	0.018

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832313	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	45.1	< 0.1	< 0.001	< 0.05	1.3	0.3	0.1	0.018
E832314	< 0.1	< 0.1	0.1	< 0.1	< 0.1	39.2	0.1	< 0.001	< 0.05	2.3	0.5	0.2	0.014
E832315	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	38.3	0.3	< 0.001	< 0.05	2.5	0.4	0.1	0.017
E832316	< 0.1	< 0.1	0.2	< 0.1	< 0.1	48.9	0.1	< 0.001	< 0.05	1.2	0.7	0.2	0.028
E832317	< 0.1	0.1	0.8	0.1	< 0.1	51.3	0.3	0.010	0.27	8.9	2.3	0.9	0.076
E832318	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	39.3	0.1	< 0.001	< 0.05	2.5	0.3	0.1	0.016
E832319	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	41.7	0.1	< 0.001	< 0.05	2.9	0.3	0.1	0.062
E832320	< 0.1	0.2	1.2	0.2	4.1	160	> 200	< 0.001	0.70	42.4	40.7	4.0	0.031
E832321	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	47.5	0.7	< 0.001	< 0.05	1.1	0.4	0.1	0.015
E832322	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	37.5	0.2	< 0.001	< 0.05	1.1	0.4	0.1	0.020
E832323	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	46.8	0.2	< 0.001	< 0.05	2.1	0.4	0.3	0.019
E832324	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	32.9	0.1	0.001	< 0.05	1.8	0.3	0.4	0.019
E832325	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	31.7	0.2	0.001	< 0.05	0.7	0.3	0.4	0.023
E832326	< 0.1	< 0.1	0.2	< 0.1	< 0.1	40.2	0.2	0.002	0.08	2.4	1.0	0.3	0.024
E832327	< 0.1	< 0.1	0.1	< 0.1	< 0.1	27.4	0.1	< 0.001	0.05	1.7	0.6	0.2	0.032
E832328	< 0.1	0.4	2.4	0.3	< 0.1	42.0	0.4	0.017	0.10	3.0	12.8	8.2	0.036
E832329	< 0.1	< 0.1	0.3	< 0.1	< 0.1	41.1	0.2	0.002	0.05	2.4	1.5	0.4	0.021
E832330	< 0.1	0.1	0.8	0.1	0.2	58.4	0.5	< 0.001	4.66	8.2	0.2	< 0.1	3.38
E832331	< 0.1	< 0.1	0.7	< 0.1	< 0.1	36.9	0.2	< 0.001	0.11	10.4	3.5	2.3	0.029
E832332	< 0.1	< 0.1	0.1	< 0.1	< 0.1	40.7	0.2	0.002	< 0.05	3.2	0.9	0.3	0.019
E832333	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	46.0	0.2	< 0.001	< 0.05	4.4	0.4	0.2	0.034
E832334	< 0.1	< 0.1	0.1	< 0.1	< 0.1	32.1	0.2	< 0.001	< 0.05	2.0	0.5	0.2	0.026
E832335	< 0.1	< 0.1	0.1	< 0.1	< 0.1	51.3	0.1	0.001	< 0.05	1.0	0.5	0.3	0.034
E832336	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	40.4	0.2	< 0.001	< 0.05	1.3	0.3	0.1	0.028
E832337	< 0.1	< 0.1	0.1	< 0.1	< 0.1	47.9	0.1	< 0.001	< 0.05	2.3	0.6	0.3	0.026
DH-1a Meas											> 500	2340	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	1.0	0.1	0.6	208	35.5		2.89	47.5	18.6	5.5	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.4	2.9		< 0.1	158	< 0.1		0.54	22.0	9.9	2.3	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.6	0.2	< 0.1	36.8	0.1		1.93	95.8	4.7	1.4	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			1.9			141				5.7			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.4	0.5	0.9	178	1.8		0.86	36.7	13.6	5.5	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.4	0.2	< 0.1	29.8	< 0.1		0.24	20.4	13.6	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.6	0.4	0.1	130	0.3			721	12.9	2.2	
SdAR-M2		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	



	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
(U.S.G.S.) Cert													
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.553
OREAS 218 Cert													0.531
OREAS 218 Meas													0.556
OREAS 218 Cert													0.531
E832301 Orig	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.8	0.1	0.001	0.05	1.4	0.6	0.8	
E832301 Dup	< 0.1	< 0.1	0.1	< 0.1	< 0.1	37.7	0.1	0.001	< 0.05	2.7	0.6	0.8	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005



**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13835  
**Invoice Date:** 29-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

16 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT **A17-13835**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva". The signature is written in a cursive style with a horizontal line underneath it.

Elitsa Hrischeva, 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

**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13835  
**Invoice Date:** 29-Dec-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

**CERTIFICATE OF ANALYSIS**

16 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-13835**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



---

Elitsa Hrischeva, Ph.D.  
Quality Control

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Results

Activation Laboratories Ltd.

Report: A17-13835

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi	
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
E832201	7	< 0.5	0.03	0.20	0.28	0.04	4.09	0.2	4	5.7	178	0.70	< 0.1	7.9	< 0.1	< 0.1	< 0.1	80	0.06	0.29	1.5	0.06	0.07	
E832202	4	< 0.5	0.03	0.22	0.36	0.05	4.30	0.7	10	10.0	48	0.16	0.1	13.6	0.7	0.1	0.3	70	0.09	0.59	1.7	0.25	0.11	
E832203	2	0.9	0.05	0.32	0.77	0.09	5.10	0.3	12	12.1	479	0.33	< 0.1	7.6	0.4	0.2	0.2	70	0.11	0.81	2.1	0.23	0.11	
E832204	< 1	6.2	0.28	0.20	1.79	0.31	2.74	0.3	18	28.6	652	1.34	< 0.1	16.7	0.9	0.4	0.3	80	0.16	1.67	8.4	0.62	0.16	
E832205	6	0.5	0.02	0.22	0.28	0.05	2.98	< 0.1	3	6.3	118	0.29	< 0.1	3.4	< 0.1	< 0.1	< 0.1	70	< 0.05	0.13	0.9	< 0.05	0.06	
E832206	< 1	2.7	0.15	0.14	1.56	0.20	2.83	0.4	13	23.7	807	1.05	< 0.1	21.8	1.0	0.4	0.4	110	0.16	1.01	7.5	0.88	0.18	
E832207	6	2.7	0.13	0.14	1.31	0.18	3.15	0.2	10	20.1	332	0.93	< 0.1	16.4	0.7	0.4	0.3	140	0.11	0.95	2.0	0.74	0.15	
E832208	3	4.0	0.30	0.58	1.71	0.32	3.08	0.2	20	445	224	1.57	< 0.1	66.1	0.8	0.6	0.3	130	0.11	1.81	6.4	0.64	0.13	
E832209	< 1	12.3	0.25	2.03	2.72	0.26	3.75	0.3	39	460	1020	2.94	< 0.1	427	3.1	0.9	1.2	140	0.32	4.93	25.7	2.13	0.12	
E832210	< 1	6.3	1.41	1.12	5.55	2.36	2.59	< 0.1	62	70.5	565	3.45	0.9	26.6	1.3	1.0	0.5	50	1.09	19.5	16.8	0.74	0.71	
E832211	< 1	11.6	0.08	0.33	2.05	0.29	3.48	0.3	25	53.9	3340	1.82	< 0.1	90.3	2.8	0.8	1.1	160	0.40	4.55	10.7	2.34	0.17	
E832212	< 1	3.0	0.13	0.19	1.12	0.15	2.59	0.3	27	25.2	449	1.03	< 0.1	18.9	0.8	0.4	0.3	90	0.13	0.89	4.4	0.54	0.13	
E832213	< 1	0.9	0.05	0.13	0.68	0.07	2.21	0.1	6	8.1	63	0.70	< 0.1	5.9	0.6	0.2	0.2	60	< 0.05	0.59	1.1	0.37	0.12	
E832214	< 1	3.2	0.18	0.25	1.60	0.18	3.34	0.5	12	21.2	171	0.83	< 0.1	15.0	0.5	0.5	0.3	50	0.10	0.96	2.6	0.63	0.10	
E832215	8	1.7	0.06	0.12	0.72	0.12	3.67	0.4	12	23.3	297	0.98	0.4	17.3	0.4	0.2	0.2	110	0.08	0.59	2.0	0.27	0.08	
E832216	6	0.7	0.08	0.12	0.68	0.06	2.00	0.3	15	14.8	131	0.58	0.2	10.7	0.2	0.2	0.1	110	0.06	0.35	3.7	0.25	0.08	
GXR-1 Meas	< 1	7.1	0.04	0.20	1.81	0.04	0.78	2.5	70	14.2	797	22.3	0.4	36.1		0.9		3160	27.2	2.61	7.4	0.57	1170	
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380	
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas	< 1	11.5	0.51	1.68	6.10	2.65	0.85	0.5	82	43.7	149	3.08	1.1	37.6		2.2		100	3.11	2.42	14.9	1.49	16.6	
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0	
SDC-1 Meas	< 1	33.8	1.45	0.77	8.15	2.80	0.88		29	38.6	823	4.32	0.6	32.6	3.2	3.0	1.1	50		4.04	17.7	1.52		
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70		
GXR-6 Meas	< 1	36.4	0.09	0.60	> 10.0	1.90	0.15	< 0.1	101	47.0	981	5.19	1.6	24.6		1.2		100	0.22	4.05	13.7	0.59	0.21	
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290	
DNC-1a Meas		4.5							140	138				253							56.0	0.55		
DNC-1a Cert		5.2							148	270				247							57	0.59		
SBC-1 Meas		164						0.4	207	93.0			2.7	81.1	3.4	3.3	1.2			8.21	22.2	1.75	0.62	
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70	
OREAS 45d (4-Acid) Meas		21.9	0.09	0.23	7.42	0.43	0.18		90	481	501	13.7	1.4	227	1.2	0.9	0.5			3.88	30.1	0.63	0.47	
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31	
SdAR-M2 (U.S.G.S.) Meas		18.3						4.7	24	36.2			0.6	46.3	2.5	7.1	0.8	1140		1.73	13.9	1.22	0.88	
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05	
OREAS 223 (Fire Assay) Meas																								
OREAS 223 (Fire Assay) Cert																								
OREAS 223 (Fire Assay) Meas																								
OREAS 223 (Fire Assay) Cert																								

Results

Activation Laboratories Ltd.

Report: A17-13835

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832206 Orig	< 1	2.7	0.15	0.14	1.56	0.20	2.83	0.4	13	23.7	807	1.05	< 0.1	21.8	1.0	0.4	0.4	110	0.16	1.01	7.5	0.88	0.18
E832206 Dup	< 1	2.6	0.15	0.14	1.58	0.19	3.02	0.3	14	28.8	806	1.07	< 0.1	21.8	1.0	0.4	0.4	80	0.14	1.00	7.8	0.86	0.19
E832212 Orig	< 1	3.0	0.13	0.19	1.12	0.15	2.59	0.3	27	25.2	449	1.03	< 0.1	18.9	0.8	0.4	0.3	90	0.13	0.89	4.4	0.54	0.13
E832212 Dup	< 1	2.9	0.12	0.18	1.06	0.13	2.55	0.3	26	18.6	456	0.99	0.1	17.9	0.7	0.3	0.3	60	0.13	0.85	3.9	0.55	0.13
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.8	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.11
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.4	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	0.04
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.7	5	< 0.01	< 0.1	0.7	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.05
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
E832201	0.8	31.8	0.2	1.5	1.4	1.3	3	0.4	3.63	< 0.1	< 1	< 0.1	< 0.1	117	1.7	2.8	0.2	1.3	0.3	0.2	< 0.1	0.1	11.9
E832202	1.2	39.5	0.4	0.9	2.1	7.2	6	0.5	15.9	< 0.1	< 1	0.2	< 0.1	119	7.0	7.7	1.9	7.0	1.4	1.4	0.2	1.1	43.2
E832203	1.4	9.2	0.8	< 0.1	3.4	6.0	< 1	0.5	1.37	< 0.1	< 1	0.2	< 0.1	174	13.3	15.2	2.4	8.3	0.9	1.3	0.1	0.9	26.4
E832204	1.1	23.4	3.9	8.6	13.9	8.5	2	1.3	0.76	< 0.1	< 1	< 0.1	< 0.1	217	37.8	76.1	7.4	23.4	2.9	2.9	0.3	1.9	22.7
E832205	0.9	21.0	0.5	0.5	1.7	1.0	3	0.4	1.11	< 0.1	< 1	< 0.1	< 0.1	51	1.5	3.1	0.2	1.5	< 0.1	0.2	< 0.1	< 0.1	22.0
E832206	1.4	15.4	2.9	1.2	9.0	11.2	3	1.3	0.68	< 0.1	< 1	0.2	< 0.1	151	50.3	98.3	10.2	32.1	4.7	4.0	0.4	2.1	26.5
E832207	0.6	17.1	2.6	0.8	8.7	9.9	4	0.9	0.55	< 0.1	< 1	0.1	< 0.1	135	42.0	76.1	8.5	28.6	3.7	3.4	0.4	2.1	21.0
E832208	1.0	32.8	3.3	0.1	12.8	9.3	2	1.9	0.64	< 0.1	< 1	0.2	< 0.1	172	31.4	47.9	6.3	20.5	2.8	2.9	0.3	1.9	28.0
E832209	2.4	25.6	3.4	17.9	10.6	35.9	1	1.3	0.61	< 0.1	< 1	1.5	< 0.1	200	101	99.9	20.8	66.4	12.1	9.2	1.0	6.2	364
E832210	< 0.1	48.8	15.8	5.5	574	13.0	37	< 0.1	0.28	< 0.1	< 1	< 0.1	< 0.1	57	4.2	9.7	1.2	6.4	1.4	2.7	0.4	2.5	33.2
E832211	1.9	19.4	3.3	37.8	19.0	32.4	2	1.5	1.07	< 0.1	< 1	1.5	< 0.1	252	117	125	23.0	74.6	11.2	10.4	1.1	5.7	98.2
E832212	1.0	11.2	1.9	0.3	6.4	8.2	5	1.0	1.08	< 0.1	< 1	0.1	0.4	130	34.6	66.7	6.8	22.4	3.0	2.7	0.3	1.4	22.5
E832213	0.7	2.9	1.0	0.2	2.6	7.6	7	0.9	0.79	< 0.1	< 1	< 0.1	< 0.1	153	11.5	16.5	2.8	10.3	1.7	1.8	0.2	1.2	12.7
E832214	1.0	9.2	2.1	< 0.1	6.7	8.6	3	1.2	0.52	< 0.1	< 1	0.1	< 0.1	160	35.9	55.8	6.6	21.3	2.8	2.4	0.3	1.5	31.0
E832215	1.3	9.9	1.2	2.1	5.3	5.0	16	1.3	0.75	< 0.1	< 1	0.6	< 0.1	119	9.8	17.6	2.3	8.1	1.4	1.2	0.2	0.9	28.7
E832216	0.7	16.7	1.3	1.5	2.3	3.4	6	0.8	0.25	< 0.1	< 1	0.1	< 0.1	79	6.5	13.9	1.5	5.8	0.7	0.9	0.1	0.6	22.2
GXR-1 Meas	13.8	782	8.3	386	2.4	25.4	17	0.6	15.5	0.8	21	21.5	6.7	611	6.8	13.6		7.4	2.6	3.9	0.6	4.2	1080
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	5.4	67.0	17.1	100	111	12.5	36	8.7	306	0.2	6	4.3	0.8	94	55.5	106		38.3	5.9	4.9	0.5	2.3	5860
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520
SDC-1 Meas		102	19.7	< 0.1	110		24	< 0.1			< 1	< 0.1		605	38.9	83.7		36.2	7.8	7.0	0.9	5.5	29.6
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GXR-6 Meas	0.4	125	27.6	216	71.9	11.1	57	< 0.1	0.25	< 0.1	< 1	0.1	< 0.1	1330	11.8	32.9		11.4	2.3	2.3	0.3	2.0	78.1
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0
DNC-1a Meas		63.4	13.1		3.2	14.6	35	1.3				0.8		100	3.5			4.6					93.7
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100
SBC-1 Meas		186	25.3	24.0	135	29.7	109	11.7	2.11		3	1.0		545	49.6	105	12.0	44.0	10.0	8.0	1.0	6.1	28.6
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000
OREAS 45d (4-Acid) Meas		42.7	21.2	5.1	39.6	10.6	56	0.1	0.26	< 0.1	< 1	< 0.1		181	16.4	35.4	3.6	13.2	2.1	3.0	0.4	2.0	369
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371
SdAR-M2 (U.S.G.S.) Meas		814	16.3		117	21.9	43	3.3	11.0					966	40.7	86.5	9.2	32.8	6.2	5.2	0.7	4.2	237
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832206 Orig	1.4	15.4	2.9	1.2	9.0	11.2	3	1.3	0.68	< 0.1	< 1	0.2	< 0.1	151	50.3	98.3	10.2	32.1	4.7	4.0	0.4	2.1	26.5
E832206 Dup	1.4	15.5	2.7	2.6	8.9	11.3	3	1.3	0.69	< 0.1	< 1	0.2	< 0.1	155	50.9	100	10.6	32.5	6.0	4.5	0.4	2.4	27.9
E832212 Orig	1.0	11.2	1.9	0.3	6.4	8.2	5	1.0	1.08	< 0.1	< 1	0.1	0.4	130	34.6	66.7	6.8	22.4	3.0	2.7	0.3	1.4	22.5
E832212 Dup	1.0	15.6	1.8	0.7	6.0	8.0	6	1.3	1.02	< 0.1	< 1	0.1	< 0.1	122	33.5	63.8	6.4	20.9	2.5	2.4	0.3	1.5	23.0
Method Blank	0.2	0.9	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	0.3	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA	
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/ml
E832201	< 0.1	< 0.1	0.1	< 0.1	< 0.1	46.3	< 0.1	0.001	0.08	1.7	0.7	1.2	0.029
E832202	< 0.1	< 0.1	0.8	0.1	< 0.1	53.0	0.1	0.002	0.26	1.9	2.1	6.6	0.028
E832203	< 0.1	< 0.1	0.5	< 0.1	< 0.1	54.7	0.2	0.002	0.46	2.4	2.2	22.8	0.032

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832204	< 0.1	0.1	0.8	< 0.1	< 0.1	67.6	0.3	< 0.001	0.23	6.1	9.7	4.7	0.032
E832205	< 0.1	< 0.1	0.1	< 0.1	< 0.1	35.5	0.1	0.002	< 0.05	1.9	0.5	0.3	0.027
E832206	< 0.1	0.1	0.8	0.1	< 0.1	57.9	0.2	0.001	0.14	4.7	5.6	2.1	0.028
E832207	< 0.1	0.1	0.7	< 0.1	< 0.1	58.8	0.3	< 0.001	0.08	4.1	4.8	1.5	0.031
E832208	< 0.1	0.1	0.7	< 0.1	< 0.1	69.1	0.3	0.002	0.11	6.1	5.1	1.7	0.032
E832209	< 0.1	0.4	2.7	0.4	< 0.1	94.5	0.5	0.003	0.60	4.1	16.8	8.2	0.030
E832210	< 0.1	0.2	1.2	0.2	< 0.1	93.6	< 0.1	< 0.001	5.51	9.2	0.7	0.2	3.29
E832211	< 0.1	0.3	2.1	0.3	< 0.1	63.5	0.9	0.007	0.46	5.6	9.8	9.1	0.044
E832212	< 0.1	< 0.1	0.7	< 0.1	< 0.1	47.9	0.2	0.001	0.12	3.6	5.1	4.0	0.033
E832213	< 0.1	< 0.1	0.7	0.1	< 0.1	36.1	0.1	0.001	0.08	2.5	2.2	4.2	0.025
E832214	< 0.1	< 0.1	0.7	0.1	< 0.1	73.4	0.3	0.002	0.17	2.9	4.5	3.6	0.032
E832215	< 0.1	< 0.1	0.5	< 0.1	< 0.1	52.8	0.2	0.002	0.11	3.1	4.0	2.6	0.035
E832216	< 0.1	< 0.1	0.3	< 0.1	< 0.1	29.1	0.2	0.001	< 0.05	2.2	1.5	0.6	0.039
GXR-1 Meas		0.3	1.9	0.3	< 0.1	276	111		0.36	743	2.1	30.5	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2080	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	0.9	0.1	0.5	207	33.2		3.02	49.4	18.2	5.4	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	
SDC-1 Meas		0.5	2.9		< 0.1	172	< 0.1		0.59	23.6	10.5	2.6	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.4	0.3	< 0.1	39.3	< 0.1		2.04	100	4.6	1.3	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			1.7			142				6.2			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.0	0.5	0.6	184	1.2		0.88	35.7	14.6	5.4	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.3	0.2	< 0.1	30.4	< 0.1		0.26	22.1	13.8	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.3	0.4	0.1	131	0.3			767	11.1	2.0	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.553
OREAS 218 Cert													0.531

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
OREAS 218 Meas													0.556
OREAS 218 Cert													0.531
E832206 Orig	< 0.1	0.1	0.8	0.1	< 0.1	57.9	0.2	0.001	0.14	4.7	5.6	2.1	
E832206 Dup	< 0.1	0.1	0.9	0.1	< 0.1	56.9	0.3	0.001	0.12	4.9	5.9	1.8	
E832212 Orig	< 0.1	< 0.1	0.7	< 0.1	< 0.1	47.9	0.2	0.001	0.12	3.6	5.1	4.0	
E832212 Dup	< 0.1	0.1	0.7	0.1	< 0.1	46.0	0.2	0.001	0.12	3.6	5.0	3.8	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	0.11	0.6	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005





**Date Submitted:** 06-Dec-17  
**Invoice No.:** A17-13836  
**Invoice Date:** 29-Dec-17  
**Your Reference:**

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

11 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A17-13836**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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Date Submitted: 06-Dec-17  
Invoice No.: A17-13836  
Invoice Date: 29-Dec-17  
Your Reference:

GOLDCORP Canada Ltd--Musselwhite Mine  
P.O. Box 7500  
Thunder bay Ontario P7B 6S8  
Canada

ATTN: Katie Lucas

## CERTIFICATE OF ANALYSIS

11 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code UT-4 Total Digestion ICP/MS

REPORT      **A17-13836**

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Notes:

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:



---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832101	7	64.8	1.68	1.38	6.87	1.28	1.80	< 0.1	65	117	565	3.65	3.1	60.3	0.9	1.2	0.4	50	< 0.05	4.90	20.2	0.51	0.24
E832102	< 1	8.0	2.67	0.43	7.03	1.65	1.75	< 0.1	30	39.4	270	1.29	3.7	15.2	0.6	1.2	0.3	40	< 0.05	1.51	4.7	0.40	0.14
E832103	< 1	22.0	1.94	0.91	6.39	1.37	1.81	< 0.1	89	106	516	3.85	0.6	41.5	0.9	1.0	0.4	70	< 0.05	2.45	12.2	0.49	0.50
E832104	< 1	9.9	2.11	0.67	5.99	1.43	1.70	< 0.1	42	95.5	469	2.15	3.0	26.2	0.7	1.0	0.3	50	< 0.05	1.56	7.5	0.53	0.23
E832105	< 1	15.8	2.22	0.63	6.84	1.47	1.67	< 0.1	21	66.2	376	2.45	1.1	26.2	0.8	1.1	0.3	30	< 0.05	1.29	7.9	0.51	0.23
E832106	< 1	8.2	2.67	1.56	7.10	1.10	2.65	< 0.1	41	111	837	3.79	2.4	43.3	1.2	0.9	0.5	20	< 0.05	1.54	15.7	0.47	0.17
E832107	< 1	16.2	2.57	0.57	7.08	1.63	2.00	< 0.1	14	66.8	405	1.94	2.5	19.7	0.8	1.0	0.3	20	< 0.05	4.28	7.1	0.65	0.17
E832108	< 1	19.1	2.38	0.59	6.59	1.57	1.99	< 0.1	9	60.0	394	1.92	2.0	23.0	0.7	1.0	0.3	20	< 0.05	3.82	7.4	0.59	0.16
E832109	< 1	32.4	1.38	5.20	5.92	0.32	4.40	0.2	107	374	1270	7.08	1.5	195	1.2	0.6	0.5	< 10	< 0.05	1.16	44.5	0.79	0.26
E832110	4	6.0	1.43	0.97	4.34	2.42	2.66	< 0.1	82	81.3	547	3.31	1.2	26.2	1.1	0.9	0.4	20	1.06	18.5	16.2	0.56	0.67
E832111	2	6.9	2.44	0.41	6.25	1.82	1.46	< 0.1	41	53.7	258	1.31	0.9	18.1	0.7	1.0	0.3	170	< 0.05	1.56	4.7	0.51	0.20
GXR-1 Meas	< 1	7.1	0.04	0.20	1.81	0.04	0.78	2.5	70	14.2	797	22.3	0.4	36.1		0.9		3160	27.2	2.61	7.4	0.57	1170
GXR-1 Cert	15.0	8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		3900	31.0	3.00	8.20	0.690	1380
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	< 1	11.5	0.51	1.68	6.10	2.65	0.85	0.5	82	43.7	149	3.08	1.1	37.6		2.2		100	3.11	2.42	14.9	1.49	16.6
GXR-4 Cert	4.50	11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		110	4.00	2.80	14.6	1.63	19.0
SDC-1 Meas	< 1	33.8	1.45	0.77	8.15	2.80	0.88		29	38.6	823	4.32	0.6	32.6	3.2	3.0	1.1	50		4.04	17.7	1.52	
SDC-1 Cert	13.00	34.0	1.52	1.02	8.34	2.72	1.00		102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	200.00		4.00	18.0	1.70	
GXR-6 Meas	< 1	36.4	0.09	0.60	> 10.0	1.90	0.15	< 0.1	101	47.0	981	5.19	1.6	24.6		1.2		100	0.22	4.05	13.7	0.59	0.21
GXR-6 Cert	9.80	32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		68.0	1.30	4.20	13.8	0.760	0.290
DNC-1a Meas		4.5							140	138				253							56.0	0.55	
DNC-1a Cert		5.2							148	270				247							57	0.59	
SBC-1 Meas		164						0.4	207	93.0			2.7	81.1	3.4	3.3	1.2			8.21	22.2	1.75	0.62
SBC-1 Cert		163						0.40	220.0	109			3.7	82.8	3.80	3.20	1.40			8.2	22.7	1.98	0.70
OREAS 45d (4-Acid) Meas		21.9	0.09	0.23	7.42	0.43	0.18		90	481	501	13.7	1.4	227	1.2	0.9	0.5			3.88	30.1	0.63	0.47
OREAS 45d (4-Acid) Cert		21.5	0.101	0.245	8.150	0.412	0.185		235.0	549	490.000	14.5	3.830	231.0	1.38	0.79	0.46			3.910	29.50	0.57	0.31
SdAR-M2 (U.S.G.S.) Meas		18.3						4.7	24	36.2			0.6	46.3	2.5	7.1	0.8	1140		1.73	13.9	1.22	0.88
SdAR-M2 (U.S.G.S.) Cert		17.9						5.1	25.2	49.6			7.29	48.8	3.58	6.6	1.21	1440.00		1.82	12.4	1.44	1.05
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							

Results

Activation Laboratories Ltd.

Report: A17-13836

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	B	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Hg	Ag	Cs	Co	Eu	Bi
DESCRIPTION	ppm	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
E832111 Orig	2	6.9	2.44	0.41	6.25	1.82	1.46	< 0.1	41	53.7	258	1.31	0.9	18.1	0.7	1.0	0.3	170	< 0.05	1.56	4.7	0.51	0.20
E832111 Dup	1	7.0	2.56	0.42	6.45	1.82	1.43	< 0.1	41	48.8	271	1.36	2.8	16.8	0.6	1.0	0.3	50	< 0.05	1.49	4.8	0.49	0.19
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.8	5	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.11
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	4.4	13	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	30	< 0.05	< 0.05	< 0.1	< 0.05	0.04
Method Blank	4	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	5.7	5	< 0.01	< 0.1	0.7	< 0.1	< 0.1	< 0.1	50	< 0.05	< 0.05	< 0.1	< 0.05	0.05
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu	
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
E832101	< 0.1	60.1	16.5	4.9	54.5	8.9	124	< 0.1	0.18	< 0.1	< 1	< 0.1	< 0.1	346	11.3	22.6	2.4	9.2	1.6	1.8	0.3	1.5	26.4	
E832102	0.3	16.8	17.1	< 0.1	40.2	6.4	154	< 0.1	0.09	< 0.1	< 1	< 0.1	0.2	441	6.8	13.8	1.5	6.1	1.3	1.1	0.2	0.9	2.4	
E832103	0.4	40.0	20.1	14.7	46.0	8.6	55	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	360	9.1	17.7	2.0	7.5	1.2	1.4	0.2	1.3	11.7	
E832104	0.2	24.8	15.3	3.2	36.4	7.4	132	< 0.1	< 0.05	< 0.1	< 1	< 0.1	0.3	372	9.0	18.4	2.1	7.5	1.7	1.5	0.2	1.4	5.0	
E832105	< 0.1	27.0	19.6	0.8	38.4	8.2	65	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	413	9.9	18.8	2.2	7.7	1.5	1.6	0.2	1.4	14.0	
E832106	< 0.1	48.9	16.5	0.2	33.9	11.5	97	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	301	6.3	13.0	1.5	5.6	1.2	1.9	0.3	1.7	4.8	
E832107	0.2	31.2	16.1	< 0.1	61.5	8.9	109	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	443	14.3	28.2	3.2	11.5	2.2	2.3	0.3	1.4	6.0	
E832108	< 0.1	31.0	15.1	0.1	57.5	8.6	83	< 0.1	< 0.05	< 0.1	< 1	< 0.1	< 0.1	450	10.7	21.7	2.6	9.4	2.2	2.1	0.2	1.4	5.0	
E832109	0.2	99.9	14.4	< 0.1	11.9	13.2	56	1.0	0.10	< 0.1	< 1	< 0.1	< 0.1	115	13.4	48.7	3.7	14.7	2.9	2.9	0.4	2.2	33.8	
E832110	< 0.1	46.0	14.8	6.6	470	9.4	47	0.7	2.53	< 0.1	< 1	0.3	< 0.1	48	2.7	6.5	0.9	4.4	1.1	1.9	0.3	1.7	33.6	
E832111	0.2	11.6	16.6	< 0.1	43.2	7.2	78	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	641	15.5	29.7	3.0	10.7	1.9	1.9	0.2	1.1	2.2	
GXR-1 Meas	13.8	782	8.3	386	2.4	25.4	17	0.6	15.5	0.8	21	21.5	6.7	611	6.8	13.6		7.4	2.6	3.9	0.6	4.2	1080	
GXR-1 Cert	16.6	760	13.8	427	14.0	32.0	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110	
DH-1a Meas																								
DH-1a Cert																								
GXR-4 Meas	5.4	67.0	17.1	100	111	12.5	36	8.7	306	0.2	6	4.3	0.8	94	55.5	106		38.3	5.9	4.9	0.5	2.3	5860	
GXR-4 Cert	5.60	73.0	20.0	98.0	160	14.0	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	6.60	5.25	0.360	2.60	6520	
SDC-1 Meas		102	19.7	< 0.1	110		24	< 0.1			< 1	< 0.1		605	38.9	83.7		36.2	7.8	7.0	0.9	5.5	29.6	
SDC-1 Cert		103.00	21.00	0.220	127.00		290.00	21.00			3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.000	
GXR-6 Meas	0.4	125	27.6	216	71.9	11.1	57	< 0.1	0.25	< 0.1	< 1	0.1	< 0.1	1330	11.8	32.9		11.4	2.3	2.3	0.3	2.0	78.1	
GXR-6 Cert	0.940	118	35.0	330	90.0	14.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0	
DNC-1a Meas		63.4	13.1		3.2	14.6	35	1.3				0.8		100	3.5			4.6					93.7	
DNC-1a Cert		70	15		5	18.0	38.0	3				0.96		118	3.6			5.20					100	
SBC-1 Meas		186	25.3	24.0	135	29.7	109	11.7	2.11		3	1.0		545	49.6	105	12.0	44.0	10.0	8.0	1.0	6.1	28.6	
SBC-1 Cert		186	27.0	25.7	147	36.5	134.0	15.3	2.40		3.3	1.01		788.0	52.5	108.0	12.6	49.2	9.6	8.5	1.20	7.10	31.0000	
OREAS 45d (4-Acid) Meas		42.7	21.2	5.1	39.6	10.6	56	0.1	0.26	< 0.1	< 1	< 0.1		181	16.4	35.4	3.6	13.2	2.1	3.0	0.4	2.0	369	
OREAS 45d (4-Acid) Cert		45.7	21.20	13.8	42.1	9.53	141	14.50	2.500	0.096	2.78	0.82		183.0	16.9	37.20	3.70	13.4	2.80	2.42	0.400	2.26	371	
SdAR-M2		814	16.3		117	21.9	43	3.3	11.0					966	40.7	86.5	9.2	32.8	6.2	5.2	0.7	4.2	237	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
SAMPLE	Se	Zn	Ga	As	Rb	Y	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
(U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert		760	17.6		149	32.7	259	26.2	13.3					990	46.6	98.8	11.0	39.4	7.18	6.28	0.97	5.88	236.0000
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 223 (Fire Assay) Meas																							
OREAS 223 (Fire Assay) Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
OREAS 218 Meas																							
OREAS 218 Cert																							
E832111 Orig	0.2	11.6	16.6	< 0.1	43.2	7.2	78	< 0.1	0.15	< 0.1	< 1	< 0.1	< 0.1	641	15.5	29.7	3.0	10.7	1.9	1.9	0.2	1.1	2.2
E832111 Dup	< 0.1	12.3	16.9	0.5	44.0	7.2	147	< 0.1	0.10	< 0.1	< 1	< 0.1	< 0.1	652	16.5	31.1	3.2	10.5	2.4	1.9	0.2	1.2	2.0
Method Blank	0.2	0.9	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	0.2	0.3	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.07	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 1	< 0.1	0.05	< 0.1	< 1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank																							

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
E832101	< 0.1	0.1	1.0	0.2	< 0.1	163	< 0.1	< 0.001	0.29	15.7	4.3	1.3	0.016
E832102	< 0.1	0.1	0.8	0.1	< 0.1	276	< 0.1	< 0.001	0.26	11.7	2.6	1.2	0.009
E832103	< 0.1	0.1	1.0	0.2	< 0.1	188	< 0.1	< 0.001	0.30	14.8	3.7	1.1	0.148
E832104	< 0.1	0.1	0.9	0.2	< 0.1	205	< 0.1	< 0.001	0.24	13.0	3.6	1.2	0.010
E832105	< 0.1	0.1	0.9	0.1	< 0.1	226	< 0.1	< 0.001	0.27	14.4	4.0	1.3	0.008
E832106	0.1	0.2	1.4	0.2	< 0.1	179	< 0.1	< 0.001	0.18	9.5	3.5	1.0	0.010
E832107	< 0.1	0.1	1.0	0.1	< 0.1	279	< 0.1	< 0.001	0.29	13.2	6.4	1.1	0.007
E832108	< 0.1	0.1	1.0	0.2	< 0.1	260	< 0.1	< 0.001	0.30	12.6	4.0	1.0	0.014
E832109	< 0.1	0.2	1.3	0.2	< 0.1	202	< 0.1	< 0.001	0.09	6.7	3.6	1.1	0.009
E832110	1.3	0.1	1.1	0.2	< 0.1	71.5	< 0.1	< 0.001	5.35	8.5	0.4	0.1	3.23
E832111	< 0.1	< 0.1	0.8	0.1	< 0.1	206	< 0.1	< 0.001	0.28	14.3	6.4	1.4	0.013
GXR-1 Meas		0.3	1.9	0.3	< 0.1	276	111		0.36	743	2.1	30.5	
GXR-1 Cert		0.430	1.90	0.280	0.175	275	164		0.390	730	2.44	34.9	
DH-1a Meas											> 500	2080	
DH-1a Cert											910	2629	
GXR-4 Meas		0.2	0.9	0.1	0.5	207	33.2		3.02	49.4	18.2	5.4	
GXR-4 Cert		0.210	1.60	0.170	0.790	221	30.8		3.20	52.0	22.5	6.20	

	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	FA-AA
SAMPLE	Ge	Tm	Yb	Lu	Ta	Sr	W	Re	Tl	Pb	Th	U	Au
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g/mt
SDC-1 Meas		0.5	2.9		< 0.1	172	< 0.1		0.59	23.6	10.5	2.6	
SDC-1 Cert		0.65	4.00		1.20	180.00	0.80		0.70	25.00	12.00	3.10	
GXR-6 Meas			1.4	0.3	< 0.1	39.3	< 0.1		2.04	100	4.6	1.3	
GXR-6 Cert			2.40	0.330	0.485	35.0	1.90		2.20	101	5.30	1.54	
DNC-1a Meas			1.7			142				6.2			
DNC-1a Cert			2.0			144				6.3			
SBC-1 Meas		0.5	3.0	0.5	0.6	184	1.2		0.88	35.7	14.6	5.4	
SBC-1 Cert		0.56	3.64	0.54	1.10	178.0	1.60		0.89	35.0	15.8	5.76	
OREAS 45d (4-Acid) Meas			1.3	0.2	< 0.1	30.4	< 0.1		0.26	22.1	13.8	2.7	
OREAS 45d (4-Acid) Cert			1.33	0.18	1.02	31.30	1.62		0.27	21.8	14.5	2.63	
SdAR-M2 (U.S.G.S.) Meas		0.4	2.3	0.4	0.1	131	0.3			767	11.1	2.0	
SdAR-M2 (U.S.G.S.) Cert		0.54	3.63	0.54	1.8	144	2.8			808	14.2	2.53	
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 223 (Fire Assay) Meas													1.77
OREAS 223 (Fire Assay) Cert													1.78
OREAS 218 Meas													0.553
OREAS 218 Cert													0.531
OREAS 218 Meas													0.556
OREAS 218 Cert													0.531
E832111 Orig	< 0.1	< 0.1	0.8	0.1	< 0.1	206	< 0.1	< 0.001	0.28	14.3	6.4	1.4	
E832111 Dup	< 0.1	0.1	0.8	0.1	< 0.1	216	< 0.1	< 0.001	0.30	14.5	8.4	1.5	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	0.11	0.6	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.001	< 0.05	< 0.5	< 0.1	< 0.1	
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005
Method Blank													< 0.005

# Appendix III – Invoices and receipts

Activation Laboratories Ltd.  
Wisk Air Helicopters

**(Withheld for client confidentiality.)**

# 2018 Biogeochemical Sampling Program



2018 Biochemical Sampling Program

<b>Claim Number</b>	<b>Black Spruce</b>	<b>Labrador Tea</b>
307247	3	3
256090	16	16
211934	2	2
314497	16	16
256091	4	4
327249	18	20
114666	9	9
239229	6	6
<b>Total</b>	<b>74</b>	<b>76</b>

# Local Karl Zeemal Geology



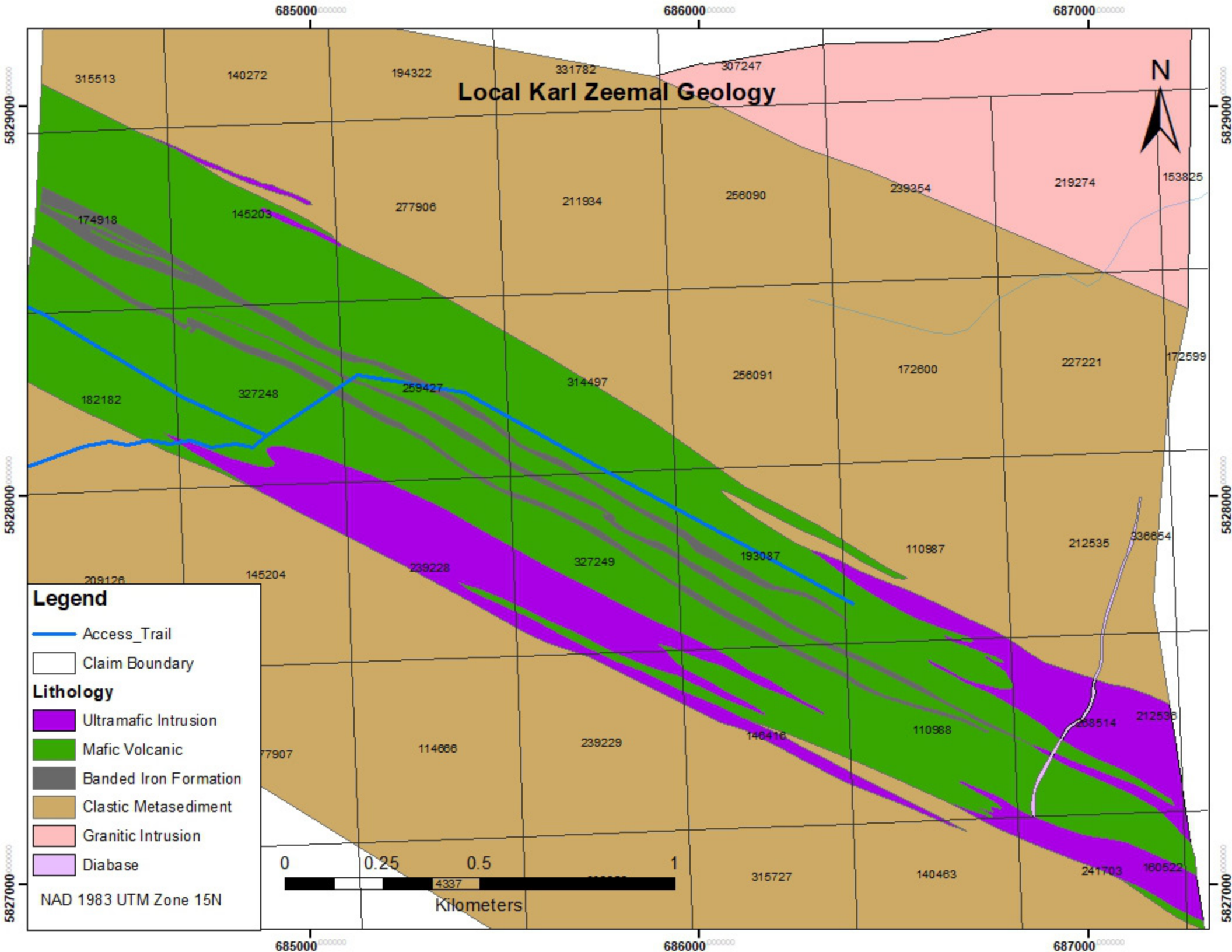
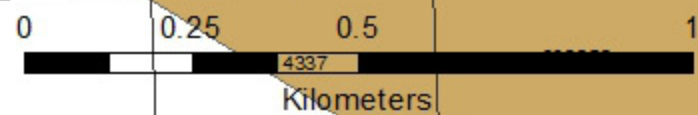
**Legend**

- Access\_Trail
- Claim Boundary

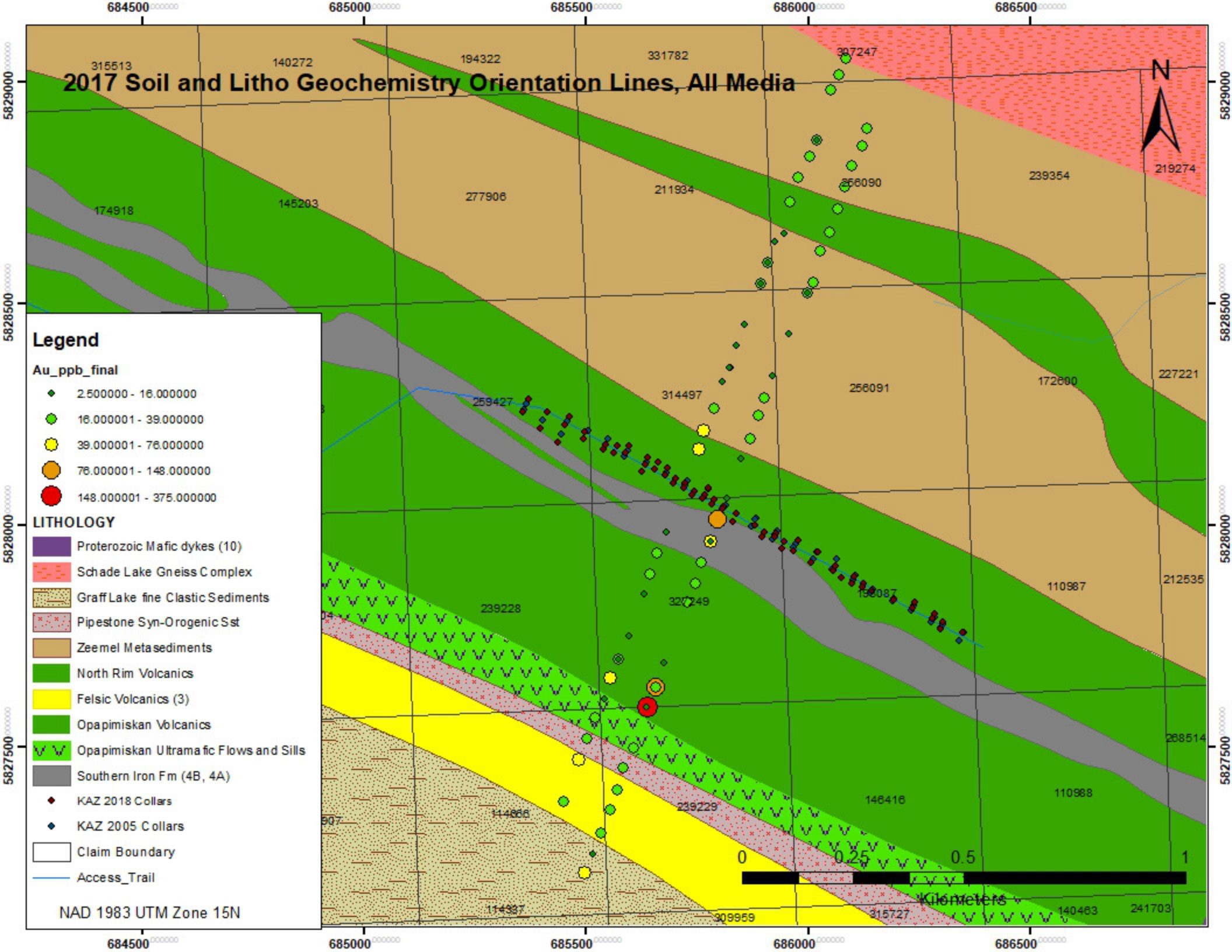
**Lithology**

- Ultramafic Intrusion
- Mafic Volcanic
- Banded Iron Formation
- Clastic Metasediment
- Granitic Intrusion
- Diabase

NAD 1983 UTM Zone 15N



# 2017 Soil and Litho Geochemistry Orientation Lines, All Media



## Legend

### Au\_ppb\_final

- ◆ 2.500000 - 16.000000
- 16.000001 - 39.000000
- 39.000001 - 76.000000
- 76.000001 - 148.000000
- 148.000001 - 375.000000

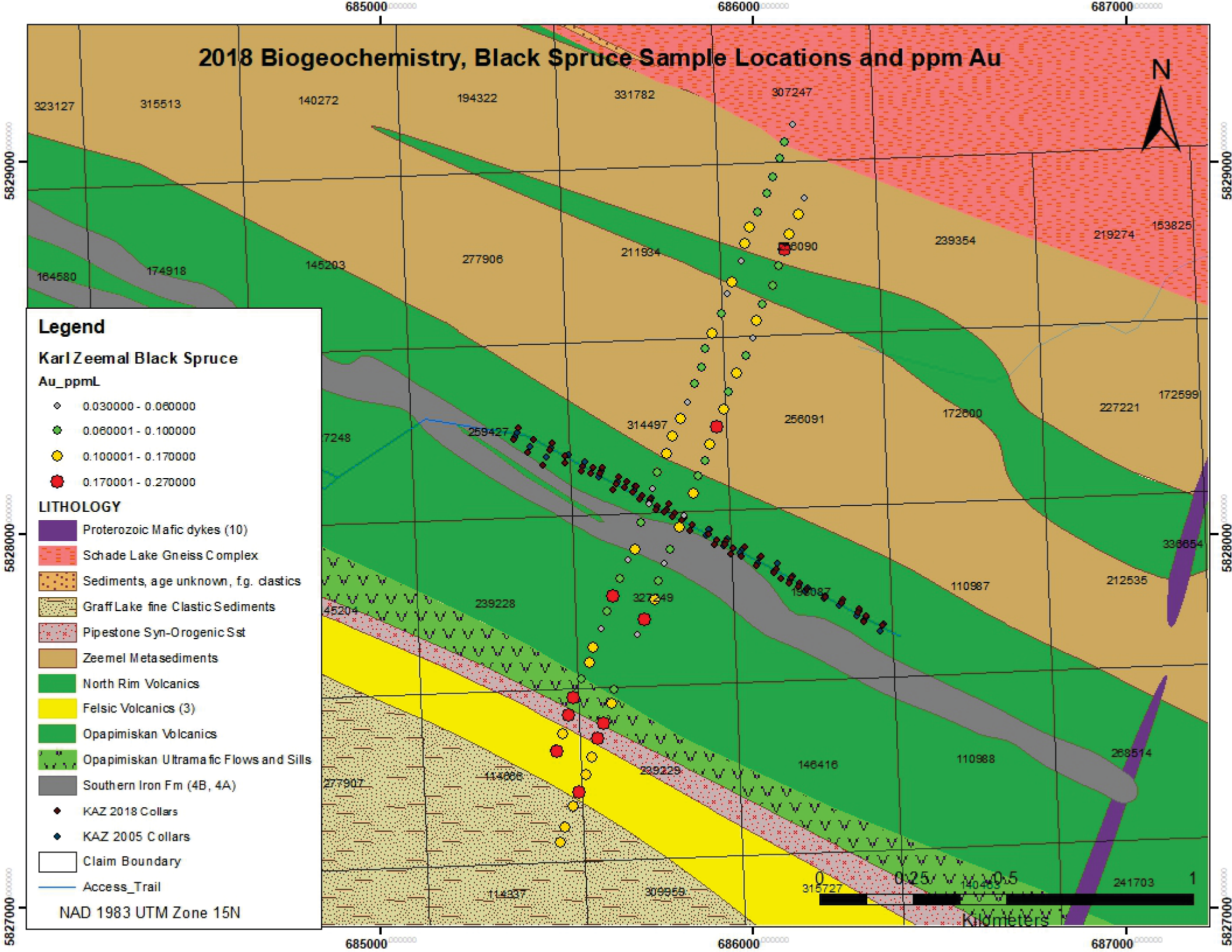
### LITHOLOGY

- Proterozoic Mafic dykes (10)
- Schade Lake Gneiss Complex
- Graff Lake fine Clastic Sediments
- Pipestone Syn-Orogenic Sst
- Zeemel Metasediments
- North Rim Volcanics
- Felsic Volcanics (3)
- Opapimiskan Volcanics
- Opapimiskan Ultramafic Flows and Sills
- Southern Iron Fm (4B, 4A)
- ◆ KAZ 2018 Collars
- ◆ KAZ 2005 Collars
- Claim Boundary
- Access\_Trail

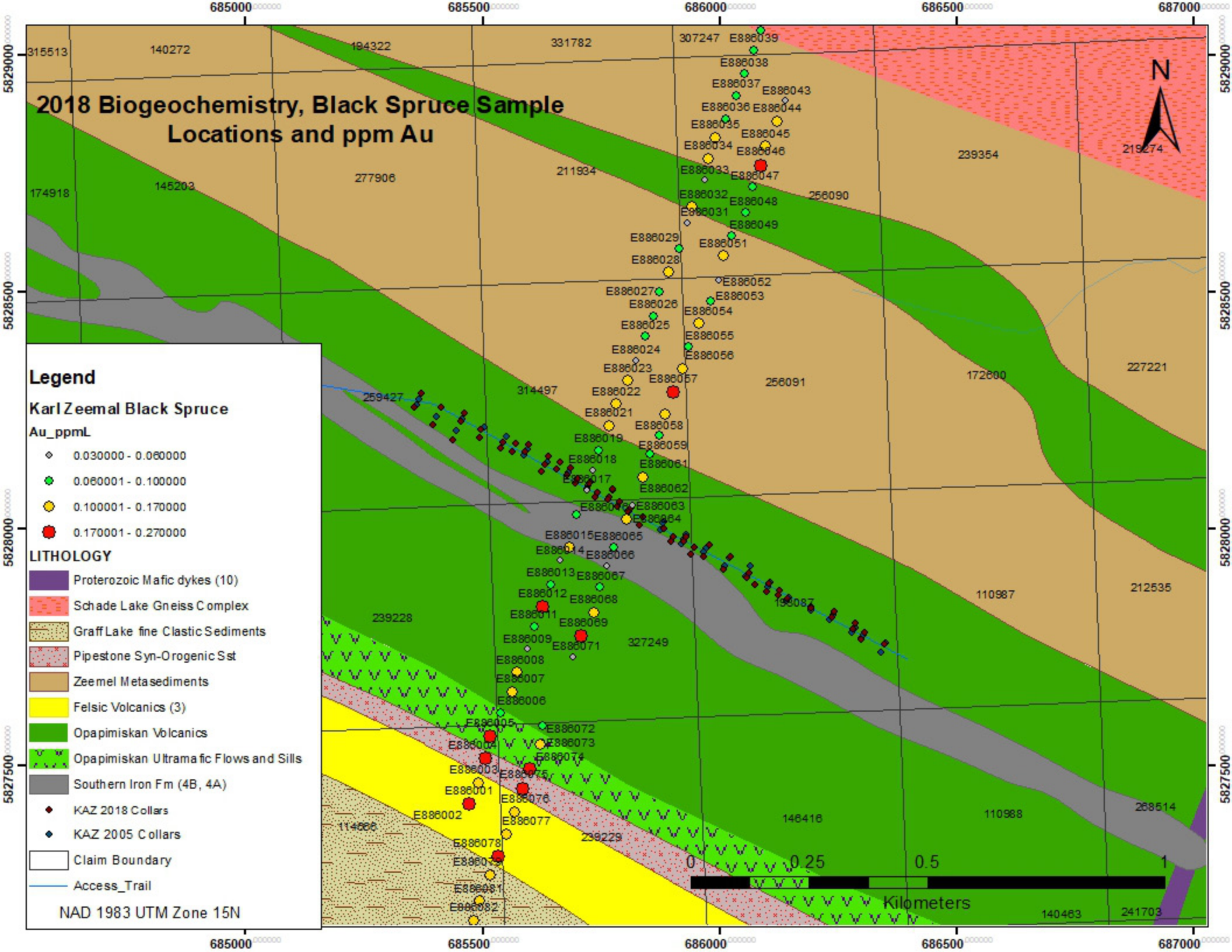
NAD 1983 UTM Zone 15N



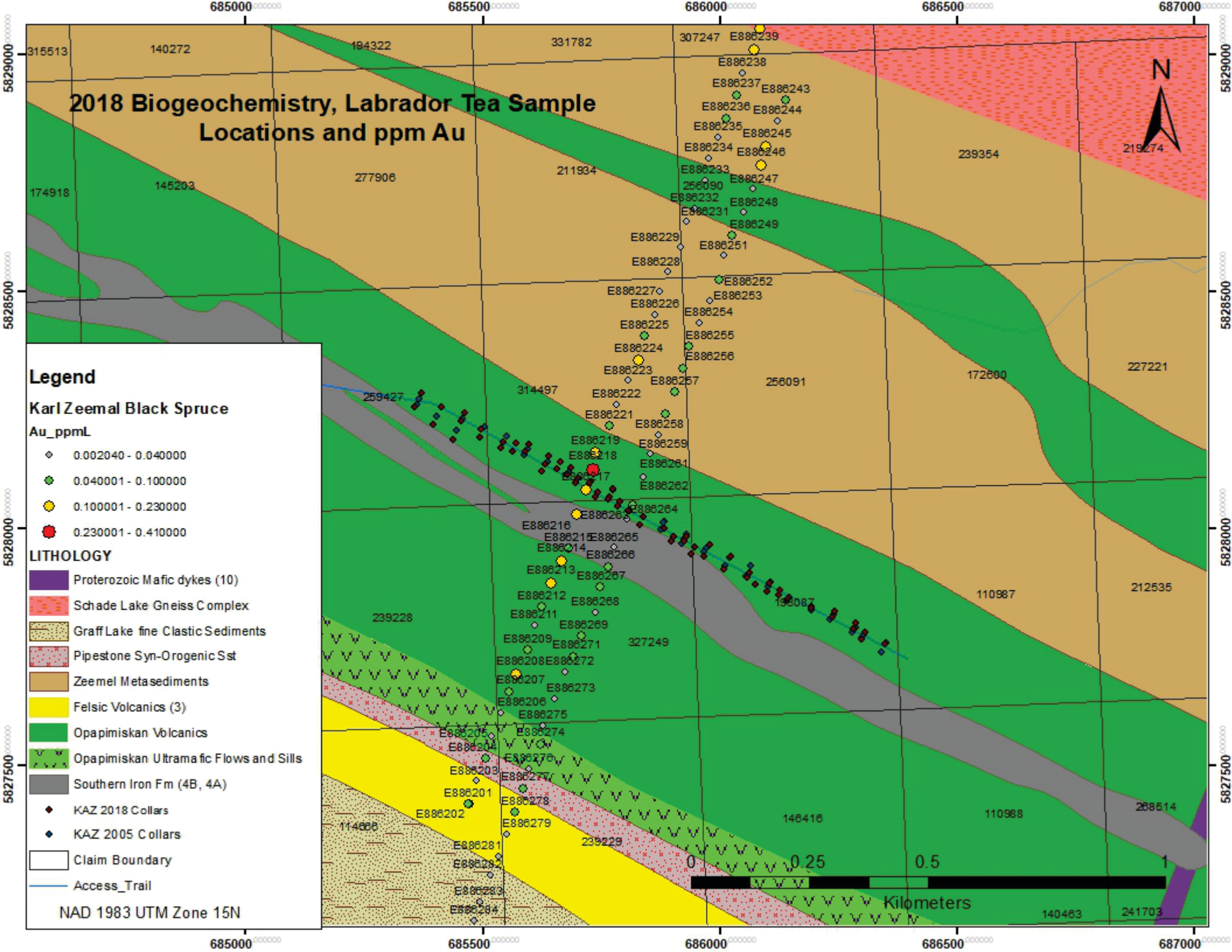
# 2018 Biogeochemistry, Black Spruce Sample Locations and ppm Au











# Appendix IV – Complete table of samples and results

Black Spruce results levelled to dry weight  
Labrador Tea results levelled to dry wight

Sample ID	Collection Date	Plant Species Sampled	Surface Material	Eastng	Northing	dry weight	ash weight	ash yield	Ash yield %	Au ppm	Ag ppm	Al pct	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca pct	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe ppm	Ga ppm	Ge ppm	Hf ppm	In ppm	K pct	La ppm	Li ppm	Mg pct	Mn ppm	Mo ppm	Na pct	Nb ppm	Ni ppm	P pct	Pb ppm	Rb ppm	S pct	Sb ppm	Se ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Tc ppm	Th ppm	Ti pct	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
E886001	8/21/2018	Black Spruce	Humus	685471	5827420	23.2	0.45	0.02	1.94	0.002483	0.017787	0.01028	0.071185	7.603448	44.612069	0.003879	0.003453	0.430603	0.022791	0.185431	0.066512	0.194935	0.022112	2.502155	174.56897	0.029871	5.82E-04	4.66E-04	3.49E-04	0.186983	0.096983	0.098922	0.043836	376.293103	0.01827	0.001494	0.003938	0.021853	0.046746	0.793319	2.259689	0.016487	0.001997	0.050443	0.020657	0.012026	10.74569	1.55E-04	3.88E-04	0.018795	3.49E-04	0.001125	0.005412	0.352483	0.006983	0.057414	63.426724	0.006959
E886002	8/21/2018	Black Spruce	Humus	685468	5827421	27.1	0.58	0.02	2.14	0.00134	0.021937	0.010701	0.064207	9.994834	71.483395	0.004494	0.003638	0.492251	0.025041	0.20803	0.066512	0.201609	0.020268	2.568266	181.91882	0.030498	5.14E-04	4.92E-04	3.00E-04	0.203749	0.105941	0.169077	0.042162	449.446494	0.028423	0.001455	0.004259	0.026153	0.041199	0.804723	2.076015	0.017122	0.001994	0.057358	0.022579	0.013269	19.476015	1.93E-04	0.001017	0.01939	3.64E-04	0.001156	0.005672	0.352483	0.008133	0.068487	96.738007	0.01541
E886003	8/21/2018	Black Spruce	Humus	685489	5827464	29.3	0.6	0.02	2.05	0.001474	0.020361	0.009829	0.05529	8.559727	42.98635	0.004096	0.002703	0.491668	0.02013	0.177747	0.062662	0.185734	0.032355	1.94744	163.82253	0.02785	4.91E-04	2.66E-04	1.84E-04	0.131672	0.09215	0.149488	0.043003	483.276451	0.01884	0.001029	0.003768	0.026826	0.046788	0.54471	2.354949	0.01413	0.015154	0.044642	0.017775	0.011058	11.201365	1.02E-04	0.001433	0.020137	3.28E-04	8.60E-04	0.004997	0.316382	0.005734	0.067624	51.194539	0.008601
E886004	8/21/2018	Black Spruce	Humus	685504	5827516	23.1	0.55	0.02	2.38	0.002031	0.020381	0.01119	0.06881	11.452381	59.047619	0.007462	0.002905	0.583338	0.023286	0.209762	0.072619	0.216429	0.032038	2.261905	192.85723	0.031905	5.24E-04	6.67E-04	2.62E-04	0.193621	0.108571	0.230952	0.055952	453.271429	0.017619	0.001405	0.004929	0.024167	0.036453	0.67481	2.359619	0.010238	0.019048	0.055476	0.020571	0.012857	14.285714	1.43E-04	0.001433	0.020137	3.28E-04	8.60E-04	0.004997	0.316382	0.005734	0.067624	51.194539	0.008601
E886005	8/21/2018	Black Spruce	Humus	685516	5827563	23.3	0.57	0.02	2.45	0.002145	0.017981	0.011742	0.062725	7.950644	73.90558	0.004648	0.00318	0.616481	0.022335	0.222639	0.076815	0.230936	0.025687	2.1797	207.93991	0.034944	5.63E-04	5.14E-04	1.71E-04	0.14776	0.114489	0.256867	0.039142	340.042918	0.02324	0.002079	0.004355	0.02417	0.037429	0.711888	1.881245	0.014678	0.012476	0.056021	0.021136	0.012476	16.70386	0.002121	3.91E-04	9.05E-04	0.006018	0.381631	0.007584	0.070944	57.978541	0.016146		
E886006	8/21/2018	Black Spruce	Humus	685538	5827613	29.9	0.49	0.02	1.64	9.75E-04	0.015487	0.011742	0.048672	7.112375	38.183946	0.002622	0.001999	0.358986	0.015487	0.229463	0.048181	0.213195	0.026712	2.228673	117.9331	0.019666	3.44E-04	2.29E-04	1.31E-04	0.245819	0.064077	0.108161	0.047689	12.22408	0.031766	9.01E-04	0.03015	0.178629	0.034248	0.376923	1.597826	0.015241	0.010161	0.03507	0.012701	0.008849	7.374582	9.83E-05	3.28E-04	0.013127	2.46E-04	8.03E-04	0.003671	0.224515	0.004589	0.39331	53.916388	0.009177
E886007	8/21/2018	Black Spruce	Humus	685561	5827658	20.3	0.4	0.02	1.97	0.001279	0.038325	0.007882	0.050049	9.103448	56.551724	0.00335	0.002286	0.466995	0.020296	0.135764	0.054778	0.1533	0.196847	3.596059	130.00926	0.022167	3.74E-04	4.33E-04	1.18E-04	0.18936	0.071724	0.068966	0.047488	121.73399	0.016946	0.001143	0.003409	0.02	0.036059	0.449621	0.565172	0.012414	0.008867	0.038621	0.011567	0.008473	20.8667	9.85E-05	0.001404	0.020137	3.28E-04	8.60E-04	0.004997	0.316382	0.005734	0.067624	51.194539	0.008601
E886008	8/21/2018	Black Spruce	Humus	685571	5827697	26.8	0.47	0.02	1.75	0.001112	0.03753	0.008067	0.052086	8.523134	59.276119	0.003507	0.002256	0.384067	0.025535	0.137843	0.066291	0.146612	0.158537	3.642239	130.00476	0.022185	3.81E-04	2.28E-04	2.28E-04	0.26306	0.071285	0.07164	0.050157	380.559702	0.013679	0.002519	0.034636	0.408619	5.243657	0.013854	0.010873	0.041388	0.011567	0.010522	10.206671	1.05E-04	3.51E-04	0.014503	2.63E-04	8.77E-04	0.003735	0.253414	0.004384	0.046299	54.014925	0.009646		
E886009	8/21/2018	Black Spruce	Soil (A or B Layer)	685593	5827747	17.35	0.31	0.02	1.79	4.57E-04	0.10113	0.005539	0.031268	0.082123	69.325648	0.002323	0.001537	0.380576	0.042167	0.081833	0.18821	0.088801	0.123821	5.324496	69.682997	0.021686	1.61E-04	2.32E-04	8.93E-05	0.268012	0.043418	0.084043	0.061285	391.29683	0.011256	9.47E-04	0.003073	0.480634	0.06611	0.282305	10.363112	0.016259	0.010184	0.027516	0.013364	0.005896	10.112968	0.008165	1.61E-04	5.18E-04	0.002912	0.145084	0.005718	0.23942	42.88144	0.006979		
E886012	8/21/2018	Black Spruce	Humus	685624	5827835	20.6	0.38	0.02	1.84	0.002121	0.025456	0.010883	0.061612	9.112621	30.990291	0.003874	0.00297	0.420583	0.023519	0.197379	0.070907	0.35233	0.065485	3.026913	177.0878	0.02976	3.87E-04	2.21E-04	2.40E-04	0.139087	0.104961	0.071942	0.050175	531.262136	0.011531	0.001125	0.003892	0.296233	0.038553	0.617961	3.726214	0.014388	0.010883	0.045194	0.017082	0.011252	3.412621	1.29E-04	0.001816	0.01385	3.50E-04	8.67E-04	0.005202	0.332039	0.008117	0.06235	45.923039	0.009408
E886013	8/21/2018	Black Spruce	Humus	685643	5827883	17.8	0.32	0.02	1.8	9.37E-04	0.10449	0.005573	0.033258	11.667416	35.595506	0.002157	0.001618	0.430667	0.01307	0.090966	0.035236	0.098157	0.045303	2.364045	80.89876	0.014166	2.16E-04	1.80E-04	1.08E-04	0.269663	0.048539	0.048539	0.061843	450.112036	0.00089	6.65E-04	0.002769	0.16	0.042607	0.282247	0.481978	0.018517	0.007191	0.027685	0.010209	0.005933	4.476404	0.010445	1.80E-04	3.96E-04	0.002679	0.16809	0.003596	0.029124	45.842697	0.007191		
E886014	8/21/2018	Black Spruce	Humus	685664	5827934	19.65	0.35	0.02	1.78	6.16E-04	0.028944	0.004631	0.033486	11.239186	70.178117	0.001781	0.001247	0.420356	0.014321	0.071247	0.034288	0.079084	0.091552	3.384224	60.559796	0.011417	1.42E-04	2.49E-04	2.49E-04	0.267176	0.037939	0.04529	0.063944	472.110178	0.006059	9.26E-04	0.002529	0.1286	0.043461	0.176922	5.877863	0.014784	0.006768	0.03028	0.012405	0.004809	11.884007	8.91E-05	0.008033	1.60E-04	3.92E-04	0.002209	0.136438	0.00285	0.020662	55.394402	0.007303	
E886015	8/21/2018	Black Spruce	Gravel	685681	5827961	25	0.41	0.02	1.64	0.001156	0.023206	0.00984	0.0451	6.4944	52.48	0.003936	0.002329	0.37064	0.025174	0.156128	0.07216	0.16728	0.153832	2.829	126.28	0.02542	3.28E-04	2.13E-04	2.46E-04	0.137104	0.082164	0.08036	0.03854	595.32	0.013612	0.00369	0.052624	0.31898	4.428	0.0123	0.008364	0.039524	0.012054	0.010496	9.6692	1.31E-04	4.92E-04	0.015793	3.12E-04	0.00205	0.004576	0.25666	0.00492	0.046576	43.788	0.010332		
E886016	8/21/2018	Black Spruce	Soil (A or B Layer)	685697	5828031	18.45	0.29	0.02	1.57	7.40E-04	0.043225	0.007545	0.042439	6.915989	63.9729	0.002672	0.001823	0.347371	0.027114	0.114271	0.174472	0.118986	0.282141	4.625132	97.452575	0.018154	2.20E-04	2.67E-04	1.89E-04	0.153409	0.060043	0.117886	0.05077	435.392954	0.011631	0.001006	0.003128	0.608293	0.04071	0.374788	6.177236	0.012575	0.007545	0.033951	0.010971	0.007859	12.543089	1.26E-04	7.86E-04	0.011521	2.20E-04	0.001226	0.003537	0.198409	0.004087	0.033794	37.566396	0.008645
E886017	8/21/2018	Black Spruce	Soil (A or B Layer)	685719	5828082	23.7	0.32	0.01	1.35	5.60E-04	0.022549	0.004726	0.016608	6.710549	37.940928	0.00162	0.001269	0.32135	0.016	0.066435	0.101536	0.067646	0.232911	3.132489	54.008439	0.010032	1.82E-04	1.89E-04	6.75E-05	0.115443	0.03335	0.037806	0.053603	310.548523	0.007966	0.002133	0.027848	0.037131	0.200506	5.940928	0.012422	0.005401	0.020523	0.008898	0.004321	7.318143	2.70E-04	0.006373	1.22E-04	0.00185	0.001971	0.106397	0.005401	0.01897	33.21519	0.004996		
E886018	8/21/2018	Black Spruce																																																								





## Appendix V – Assay Certificates



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Page: 1  
Total # Pages: 6 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2018  
Account: OPB

## CERTIFICATE VA18218834

Project: Vegetation Sampling

P.O. No.: 4570037823

This report is for 166 Vegetation samples submitted to our lab in Vancouver, BC, Canada on 4-SEP-2018.

The following have access to data associated with this certificate:

THOMAS BISSIG  
DAVID MURRAY

NIC GUEST  
MATT ZAGO

STEPHEN MILLER

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
BAG-01	Bulk Master for Storage
DRY-VEG	Dry Vegetation
LOG-22	Sample login - Rcd w/o BarCode
LOG-24	Pulp Login - Rcd w/o Barcode
VEG-ASH01	Controlled Ignition - Veg Samp. @ 475C

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-VEG41a	Super Trace - Ashed Vegetation Samples

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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Page: 2 - A  
 Total # Pages: 6 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 25-OCT-2018  
 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	WEI-21	VEG-ASH01	VEG-ASH01	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Recvd Wt. kg	WT. SAMP g	WT. ASH	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm
E886001		0.10	23.2	0.45	0.128	0.917	0.53	3.67	392	2300	0.20	0.178	22.2	1.175	9.56	3.36
E886002		0.14	27.1	0.58	0.0626	1.025	0.50	3.00	467	3340	0.21	0.170	23.0	1.170	9.72	3.11
E886003		0.12	29.3	0.60	0.0720	1.205	0.48	2.70	418	2090	0.20	0.132	24.0	0.983	8.68	3.06
E886004		0.12	23.1	0.55	0.0853	0.856	0.47	2.89	481	2480	0.20	0.122	24.5	0.978	8.81	3.05
E886005		0.12	23.3	0.57	0.0877	0.735	0.48	2.75	325	3000	0.19	0.130	25.2	0.913	9.06	3.14
E886006		0.16	29.9	0.49	0.0595	0.945	0.44	2.97	434	2330	0.16	0.122	21.9	0.945	7.38	2.94
E886007		0.14	20.3	0.40	0.0649	1.945	0.40	2.54	462	2870	0.17	0.116	23.7	1.030	6.89	2.78
E886008		0.12	26.8	0.47	0.0634	2.14	0.46	2.97	486	3380	0.20	0.146	21.9	1.285	7.86	3.78
E886009		0.08	17.35	0.31	0.0256	5.66	0.31	1.75	451	3880	0.13	0.086	21.3	2.36	4.58	10.40
E886010		0.02			0.0052	0.041	2.86	4.13	351	101.5	0.53	0.103	17.15	0.268	28.4	19.55
E886011		0.10	24.0	0.64	0.0276	2.90	3.30	1.44	237	1965	0.23	0.068	15.50	1.090	11.80	5.88
E886012		0.12	20.6	0.38	0.115	1.380	0.59	3.34	494	1680	0.21	0.161	22.8	1.275	10.70	3.80
E886013		0.10	17.80	0.32	0.0521	0.806	0.31	1.85	649	1980	0.12	0.090	19.25	0.727	5.06	1.965
E886014		0.12	19.65	0.35	0.0346	1.625	0.26	1.88	631	3940	0.10	0.070	23.6	0.804	4.00	1.925
E886015		0.12	25.0	0.41	0.0705	1.415	0.60	2.75	396	3200	0.24	0.142	22.6	1.535	9.52	4.40
E886016		0.10	18.45	0.29	0.0471	2.75	0.48	2.70	440	4070	0.17	0.116	22.1	1.725	7.27	11.10
E886017		0.12	23.7	0.32	0.0415	1.670	0.35	1.23	497	2810	0.12	0.094	23.8	1.185	4.55	7.52
E886018		0.10	20.4	0.31	0.0438	3.07	0.32	2.04	515	1665	0.12	0.088	20.3	1.865	5.31	5.27
E886019		0.08	18.75	0.30	0.0656	2.95	0.35	2.34	424	5210	0.15	0.116	23.4	2.44	6.13	2.90
E886020		0.02			0.0051	0.046	2.93	4.23	369	108.0	0.53	0.112	18.20	0.256	30.3	19.25
E886021		0.12	18.85	0.27	0.0838	0.964	0.39	2.15	496	2410	0.14	0.115	21.3	0.732	6.83	2.53
E886022		0.12	20.6	0.36	0.0957	0.975	0.36	2.48	456	2840	0.15	0.104	24.0	0.875	6.23	2.46
E886023		0.10	22.7	0.44	0.0739	1.240	0.48	3.58	401	1910	0.17	0.146	24.2	1.040	8.86	2.98
E886024		0.12	24.2	0.42	0.0259	2.53	0.32	1.94	529	2530	0.11	0.086	22.5	1.185	5.21	2.32
E886025		0.12	25.7	0.50	0.0436	1.740	0.33	2.12	434	3230	0.12	0.090	23.6	0.921	5.30	2.66
E886026		0.14	25.5	0.42	0.0651	2.09	0.53	2.32	375	2590	0.17	0.114	23.7	1.110	7.18	3.19
E886027		0.12	19.40	0.39	0.0453	1.840	0.36	2.20	483	1825	0.14	0.103	20.8	0.930	6.13	2.51
E886028		0.10	20.1	0.43	0.0663	1.555	0.39	2.01	470	2910	0.14	0.110	24.6	0.861	7.35	2.45
E886029		0.14	27.0	0.60	0.0321	1.210	0.31	1.97	347	2340	0.11	0.091	21.6	1.025	5.81	1.925
E886030		0.02			0.0042	0.037	2.91	4.12	372	104.0	0.54	0.107	17.95	0.251	30.1	18.40
E886031		0.12	16.15	0.39	0.0283	0.447	0.23	1.34	282	1605	0.07	0.057	21.6	2.78	3.11	1.535
E886032		0.18	24.6	0.33	0.107	0.410	0.32	2.76	420	2880	0.11	0.105	24.4	0.823	6.22	2.69
E886033		0.14	22.9	0.42	0.0281	1.180	0.31	2.19	405	2640	0.11	0.126	23.7	0.784	5.76	2.17
E886034		0.12	20.2	0.37	0.0628	1.745	0.33	2.44	375	1780	0.12	0.093	25.5	1.515	5.88	2.86
E886035		0.14	21.3	0.37	0.0725	1.785	0.39	2.24	400	1965	0.16	0.140	23.8	0.969	7.76	2.15
E886036		0.12	23.3	0.37	0.0470	2.35	0.44	2.96	452	2430	0.18	0.144	22.5	1.230	8.00	2.82
E886037		0.20	23.0	0.37	0.0573	2.99	0.46	2.10	354	3690	0.13	0.106	22.1	1.190	6.43	3.11
E886038		0.18	21.1	0.46	0.0360	2.03	0.27	1.63	364	4180	0.10	0.071	26.8	0.829	4.24	1.740
E886039		0.22	23.1	0.51	0.0466	1.155	0.48	2.41	392	2670	0.18	0.137	23.1	0.892	8.60	2.88
E886040		0.02			0.0035	0.040	2.97	3.82	377	105.5	0.49	0.110	17.85	0.262	29.4	19.05





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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	
	Units LOD	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
		0.01	0.005	0.01	1	0.004	0.005	0.002	0.001	0.005	0.01	0.002	0.1	0.001	0.1	0.01
E886001		10.05	1.140	129.0	9000	1.540	0.030	0.024	0.002	0.018	9.64	5.00	5.1	2.26	19400	0.95
E886002		9.42	0.947	120.0	8500	1.425	0.024	0.023	0.001	0.014	9.52	4.95	7.9	1.970	21000	1.02
E886003		9.07	1.580	95.1	8000	1.360	0.024	0.013	0.003	0.009	6.43	4.50	7.3	2.10	23600	0.92
E886004		9.09	1.270	95.0	8100	1.340	0.022	0.028	0.001	0.011	8.08	4.56	9.7	2.35	19050	0.74
E886005		9.44	1.050	89.1	8500	1.410	0.023	0.021	0.001	0.007	6.04	4.68	10.5	1.600	13900	0.95
E886006		8.03	1.630	136.0	7200	1.200	0.021	0.014	0.002	0.008	>10.0	3.91	6.6	2.91	12950	0.84
E886007		7.78	9.99	182.5	6600	1.125	0.019	0.022	<0.001	0.006	9.61	3.64	3.5	2.41	11050	0.86
E886008		8.36	9.04	194.0	6900	1.265	0.016	0.013	<0.001	0.013	>10.0	4.04	4.4	2.86	21700	0.78
E886009		4.97	6.93	298	3900	0.710	0.009	0.013	0.002	0.005	>10.0	2.43	4.5	3.43	21900	0.63
E886010		155.0	1.125	81.0	23700	6.54	0.056	0.255	0.001	0.034	1.21	13.15	13.1	1.850	1060	0.79
E886011		5.06	9.64	123.5	2900	8.70	0.027	0.017	0.005	0.013	6.46	5.82	18.2	1.810	11500	0.70
E886012		19.10	3.55	165.5	9600	1.625	0.021	0.012	0.003	0.013	7.54	5.69	3.9	2.72	28800	0.83
E886013		5.46	2.52	131.5	4500	0.788	0.012	0.010	<0.001	0.006	>10.0	2.70	2.7	3.44	30600	0.45
E886014		4.44	5.14	190.0	3400	0.641	0.008	0.014	0.001	<0.005	>10.0	2.13	2.5	3.59	26500	0.37
E886015		10.20	9.38	172.5	7700	1.550	0.020	0.013	0.001	0.015	8.36	5.01	4.9	2.35	36300	0.83
E886016		7.57	17.95	265	6200	1.155	0.014	0.017	0.001	0.012	9.76	3.82	7.5	3.23	27700	0.74
E886017		5.01	17.25	232	4000	0.743	0.012	0.014	0.001	0.005	8.55	2.47	2.8	3.97	23000	0.59
E886018		5.90	2.45	345	5000	0.839	0.012	0.007	<0.001	0.006	>10.0	2.74	2.8	3.18	20000	0.54
E886019		6.41	2.45	248	5400	0.942	0.014	0.012	<0.001	0.006	>10.0	3.21	2.9	2.59	4400	0.65
E886020		169.5	1.155	82.9	26000	6.72	0.063	0.273	0.001	0.030	1.25	14.15	12.8	1.920	1130	0.91
E886021		7.12	3.48	166.5	5900	1.035	0.015	0.008	0.002	0.008	>10.0	3.60	2.8	3.12	9480	0.64
E886022		6.36	3.96	202	5100	0.940	0.011	0.010	0.002	0.006	>10.0	3.39	2.6	2.53	14100	0.57
E886023		8.84	3.50	152.5	7400	1.275	0.023	0.009	0.001	0.013	8.62	4.68	3.4	2.26	15300	0.72
E886024		4.84	6.34	229	4200	0.781	0.010	0.014	0.001	0.006	>10.0	2.75	3.3	2.85	30400	0.49
E886025		5.43	13.60	182.5	4900	0.767	0.012	0.011	0.001	0.007	9.80	2.81	2.6	2.58	29200	0.56
E886026		7.33	6.86	195.5	6800	1.195	0.013	0.005	0.001	0.007	9.24	3.84	4.6	2.72	26200	0.62
E886027		5.44	2.81	178.0	4700	0.854	0.010	0.008	0.002	0.006	>10.0	3.22	2.9	3.06	28300	0.59
E886028		6.33	1.845	141.5	5600	1.065	0.015	0.018	0.001	0.007	9.09	3.86	3.6	2.49	12950	0.56
E886029		5.39	2.59	126.5	4300	0.784	0.015	0.015	<0.001	0.007	>10.0	3.02	2.4	2.13	12000	0.55
E886030		152.0	1.200	81.1	24000	6.42	0.050	0.259	0.001	0.021	1.23	14.00	13.1	1.900	1105	0.84
E886031		2.85	5.47	95.8	2400	0.550	0.008	0.028	0.001	0.005	>10.0	1.665	1.2	1.830	18950	0.28
E886032		6.45	5.81	69.4	5900	0.920	0.014	0.013	0.002	0.007	9.50	3.24	3.5	2.83	19050	0.63
E886033		5.09	2.55	118.5	4600	0.815	0.015	0.012	0.002	0.007	>10.0	2.98	2.7	2.64	13400	0.92
E886034		5.18	2.68	255	4700	0.835	0.013	0.009	0.001	0.009	7.31	3.05	2.4	2.01	30000	0.68
E886035		5.64	5.93	163.5	5200	0.965	0.023	0.009	<0.001	0.011	9.03	3.93	2.8	1.960	32000	0.79
E886036		6.80	3.27	240	5600	1.105	0.014	0.010	<0.001	0.013	9.86	4.19	4.7	2.35	26300	0.94
E886037		6.25	10.80	198.5	5400	1.070	0.017	0.015	<0.001	0.006	7.53	3.40	5.7	2.24	27000	0.73
E886038		4.34	2.07	147.5	3700	0.758	0.013	0.024	<0.001	0.005	7.32	2.28	2.4	1.970	17200	0.56
E886039		8.08	5.68	141.5	7100	1.295	0.020	0.012	<0.001	0.009	>10.0	4.60	8.3	2.51	14100	1.22
E886040		155.5	1.100	82.8	24200	6.70	0.045	0.268	<0.001	0.031	1.25	13.90	12.5	1.980	1105	0.92



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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Na %	Nb ppm	Ni ppm	P %	Pb ppm	Pd ppm	Pt ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm
E886001		0.077	0.203	13.50	2.41	40.9	0.002	<0.002	116.5	<0.001	0.85	1.03	2.58	1.065	0.62	554
E886002		0.068	0.199	10.35	1.925	37.6	<0.001	<0.002	97.0	0.001	0.80	0.93	2.68	1.055	0.62	910
E886003		0.063	0.184	10.10	1.795	26.6	<0.001	<0.002	115.0	0.001	0.69	0.74	2.18	0.868	0.54	547
E886004		0.059	0.207	10.15	1.875	28.3	<0.001	<0.002	125.0	<0.001	0.85	0.80	2.33	0.864	0.54	600
E886005		0.085	0.178	9.88	1.530	29.1	0.001	<0.002	76.9	<0.001	0.60	0.51	2.29	0.864	0.51	661
E886006		0.055	0.184	10.90	2.65	23.0	<0.001	<0.002	97.5	0.001	0.93	0.62	2.14	0.775	0.54	450
E886007		0.058	0.173	10.15	1.830	22.8	0.003	<0.002	287	0.002	0.63	0.45	1.96	0.587	0.43	1060
E886008		0.066	0.190	17.25	1.975	23.3	<0.001	<0.002	299	0.001	0.79	0.62	2.36	0.828	0.60	582
E886009		0.053	0.172	26.9	3.70	15.80	0.001	<0.002	580	0.002	0.91	0.57	1.54	0.636	0.33	566
E886010		0.580	0.046	136.5	0.238	8.04	0.001	0.003	20.9	0.001	0.44	0.17	12.05	0.384	0.75	1040
E886011		0.369	0.327	14.40	1.790	9.67	<0.001	<0.002	363	0.003	0.46	0.34	4.92	0.323	0.30	510
E886012		0.061	0.211	15.85	2.09	33.5	<0.001	<0.002	202	0.002	0.78	0.59	2.45	0.926	0.61	185.0
E886013		0.037	0.154	8.90	2.37	15.70	<0.001	<0.002	268	0.003	1.03	0.40	1.54	0.668	0.33	249
E886014		0.052	0.142	7.01	2.44	9.92	0.001	<0.002	330	0.002	0.83	0.38	1.70	0.473	0.27	667
E886015		0.075	0.225	27.6	1.945	26.7	0.001	<0.002	270	0.002	0.75	0.51	2.41	0.735	0.64	553
E886016		0.064	0.199	38.7	2.59	23.8	0.004	<0.002	393	0.002	0.80	0.48	2.16	0.698	0.50	798
E886017		0.050	0.158	46.5	2.75	14.85	<0.001	<0.002	440	0.001	0.92	0.40	1.52	0.659	0.32	542
E886018		0.056	0.180	36.1	3.70	19.80	<0.001	<0.002	325	0.002	1.02	0.55	1.69	0.656	0.36	446
E886019		0.056	0.176	46.1	2.38	22.8	0.001	<0.002	242	0.003	0.69	0.55	1.88	0.529	0.41	644
E886020		0.597	0.045	141.5	0.254	8.51	<0.001	0.003	21.2	<0.001	0.46	0.19	12.25	0.402	0.75	1090
E886021		0.050	0.180	17.60	2.45	19.00	0.001	<0.002	271	0.002	0.86	0.40	1.91	0.510	0.42	472
E886022		0.051	0.173	12.35	2.45	19.15	<0.001	<0.002	266	0.001	0.69	0.44	1.85	0.526	0.41	419
E886023		0.065	0.181	13.10	2.19	32.5	<0.001	<0.002	208	0.001	0.78	0.63	2.17	0.765	0.54	336
E886024		0.042	0.158	19.45	2.81	11.55	<0.001	<0.002	319	0.001	1.03	0.43	1.50	0.549	0.38	344
E886025		0.053	0.157	25.8	2.52	17.65	0.002	<0.002	327	0.002	0.74	0.40	1.47	0.528	0.33	576
E886026		0.057	0.174	25.2	2.20	18.75	<0.001	<0.002	262	0.001	0.82	0.39	2.00	0.621	0.47	571
E886027		0.044	0.172	20.5	2.67	17.40	<0.001	<0.002	249	0.004	0.96	0.39	1.77	0.570	0.38	301
E886028		0.061	0.161	9.73	1.750	20.4	0.002	<0.002	165.5	0.003	0.68	0.45	2.14	0.668	0.45	599
E886029		0.041	0.144	11.20	1.965	13.95	<0.001	<0.002	253	0.002	0.65	0.52	1.55	0.474	0.35	400
E886030		0.592	0.041	136.0	0.251	8.26	<0.001	0.003	19.80	0.001	0.46	0.15	11.60	0.378	0.74	1080
E886031		0.036	0.114	10.05	2.22	12.45	0.001	<0.002	337	0.001	1.03	0.48	0.95	0.379	0.26	255
E886032		0.074	0.158	9.07	2.71	20.4	0.001	<0.002	279	0.001	0.88	0.66	1.59	0.766	0.37	2030
E886033		0.051	0.150	7.90	2.61	17.20	0.002	<0.002	236	0.001	0.69	0.59	1.59	0.543	0.40	1220
E886034		0.059	0.144	13.00	2.45	20.0	<0.001	<0.002	207	0.002	0.52	0.65	1.49	0.421	0.41	382
E886035		0.053	0.169	10.60	2.62	26.0	<0.001	0.002	250	0.001	0.62	0.77	1.89	0.600	0.51	445
E886036		0.048	0.191	16.20	2.55	22.8	0.002	<0.002	292	0.001	0.62	0.75	2.05	0.597	0.60	613
E886037		0.048	0.156	24.2	1.960	16.20	<0.001	0.002	319	0.001	0.71	0.57	1.77	0.607	0.47	422
E886038		0.036	0.124	6.05	1.560	9.65	<0.001	<0.002	174.5	0.008	0.42	0.35	1.34	0.338	0.30	402
E886039		0.038	0.189	11.70	1.915	19.25	<0.001	<0.002	297	0.001	0.94	0.57	2.17	0.513	0.56	590
E886040		0.582	0.041	147.0	0.253	7.86	<0.001	0.003	20.6	<0.001	0.48	0.17	11.60	0.457	0.78	1060



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Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Ta ppm 0.001	Te ppm 0.02	Th ppm 0.002	Ti % 0.001	Tl ppm 0.002	U ppm 0.005	V ppm 0.05	W ppm 0.01	Y ppm 0.003	Zn ppm 0.1	Zr ppm 0.02
E886001		0.008	0.02	0.969	0.018	0.058	0.279	16.60	0.36	2.96	3270	0.34
E886002		0.009	0.05	0.906	0.017	0.054	0.265	16.55	0.38	3.20	4520	0.72
E886003		0.005	0.07	0.836	0.016	0.042	0.244	15.45	0.28	2.77	2500	0.42
E886004		0.006	<0.02	0.855	0.016	0.036	0.232	15.20	0.30	2.75	2750	0.77
E886005		<0.001	<0.02	0.867	0.016	0.037	0.246	15.60	0.31	2.90	2370	0.66
E886006		0.006	0.02	0.801	0.015	0.049	0.224	13.70	0.28	2.40	3290	0.56
E886007		0.005	<0.02	0.731	0.014	0.030	0.198	12.90	0.30	2.19	3990	0.61
E886008		0.006	0.02	0.827	0.015	0.050	0.213	14.45	0.25	2.64	3080	0.55
E886009		<0.001	<0.02	0.457	0.009	0.029	0.163	8.12	0.32	1.340	2400	0.38
E886010		<0.001	0.04	3.83	0.023	0.138	0.599	54.8	0.07	10.70	191.5	9.02
E886011		0.010	<0.02	1.900	0.036	0.037	0.755	23.6	0.24	4.30	1130	0.67
E886012		0.007	<0.02	1.020	0.019	0.047	0.282	18.00	0.44	3.38	2490	0.51
E886013		<0.001	<0.02	0.581	0.010	0.022	0.149	9.35	0.20	1.620	2550	0.40
E886014		0.005	<0.02	0.451	0.009	0.022	0.124	7.66	0.16	1.160	3110	0.41
E886015		0.008	0.03	0.963	0.019	0.125	0.279	15.65	0.30	2.84	2670	0.63
E886016		0.008	0.05	0.733	0.014	0.078	0.225	12.60	0.26	2.15	2390	0.55
E886017		<0.001	0.02	0.472	0.009	0.137	0.146	7.88	0.40	1.405	2460	0.37
E886018		<0.001	<0.02	0.516	0.011	0.029	0.175	9.56	0.31	1.455	3280	0.27
E886019		0.006	<0.02	0.617	0.012	0.035	0.198	11.10	0.24	1.895	2460	0.43
E886020		<0.001	<0.02	4.02	0.024	0.142	0.646	62.7	0.08	11.05	201	9.74
E886021		0.005	0.02	0.720	0.014	0.032	0.211	12.15	0.25	2.06	3170	0.42
E886022		0.005	0.02	0.686	0.012	0.055	0.189	10.65	0.25	1.845	2750	0.35
E886023		0.006	0.05	0.876	0.016	0.071	0.260	14.55	0.27	2.71	3110	0.38
E886024		<0.001	<0.02	0.550	0.010	0.052	0.161	8.58	0.22	1.465	2990	0.30
E886025		0.006	<0.02	0.523	0.010	0.129	0.174	9.02	0.25	1.520	3350	0.34
E886026		0.006	<0.02	0.799	0.014	0.149	0.207	12.40	0.23	2.13	3740	0.34
E886027		0.005	<0.02	0.620	0.011	0.034	0.173	9.57	0.29	1.855	3370	0.36
E886028		0.007	0.02	0.706	0.013	0.036	0.197	11.30	0.22	2.25	3720	0.66
E886029		<0.001	0.02	0.564	0.010	0.070	0.181	8.83	0.20	1.730	2380	0.52
E886030		<0.001	0.05	4.06	0.024	0.143	0.638	58.5	0.06	10.85	197.0	8.05
E886031		<0.001	0.03	0.315	0.007	0.012	0.112	5.10	0.16	0.951	1560	0.99
E886032		<0.001	<0.02	0.614	0.012	0.034	0.191	10.55	0.28	1.805	3480	0.43
E886033		0.005	<0.02	0.567	0.011	0.027	0.177	8.78	0.24	1.730	3800	0.33
E886034		<0.001	0.02	0.570	0.011	0.115	0.185	8.81	0.18	1.775	2610	0.27
E886035		0.005	<0.02	0.681	0.012	0.058	0.228	10.55	0.20	2.35	2280	0.53
E886036		0.006	<0.02	0.827	0.014	0.094	0.245	12.10	0.25	2.33	3040	0.53
E886037		0.006	0.02	0.647	0.012	0.058	0.182	10.45	0.24	2.13	3570	0.62
E886038		<0.001	0.04	0.432	0.009	0.053	0.126	7.16	0.18	1.370	2720	0.92
E886039		0.005	0.02	0.878	0.015	0.045	0.239	14.15	0.30	2.84	2900	0.47
E886040		0.005	0.02	3.79	0.023	0.130	0.591	58.7	0.08	11.70	199.5	9.53



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To: GOLDCORP INC - MUSSELWHITE  
 MUSSELWHITE MINE  
 PO BOX 7500  
 THUNDER BAY ON P7B 6S8

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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	WEI-21	VEG-ASH01	VEG-ASH01	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Recvd Wt. kg	WT. SAMP g	WT. ASH g	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm
		0.02	0.01	0.01	0.0002	0.001	0.01	0.01	1	0.1	0.01	0.001	0.01	0.001	0.003	0.002
E886041		0.14	21.3	0.44	0.0349	1.270	0.28	2.18	432	2250	0.10	0.083	23.6	0.757	4.63	1.920
E886042		0.16	21.9	0.41	0.0366	1.995	0.45	2.60	508	1890	0.17	0.129	21.7	1.235	7.83	3.00
E886043		0.14	23.1	0.35	0.0412	3.01	0.40	1.85	379	1855	0.10	0.073	22.8	1.055	3.94	2.44
E886044		0.18	21.3	0.37	0.0716	1.495	0.35	2.26	394	1255	0.12	0.117	21.7	0.804	6.02	2.32
E886045		0.12	22.4	0.53	0.0509	0.996	0.27	2.32	405	2180	0.12	0.100	22.6	0.770	5.10	1.935
E886046		0.14	17.40	0.81	0.123	1.110	0.39	3.04	376	1985	0.12	0.119	21.7	2.63	7.32	3.55
E886047		0.16	21.3	0.41	0.0553	0.824	0.28	2.44	359	2730	0.09	0.085	24.1	0.622	4.93	1.875
E886048		0.12	21.0	0.37	0.0573	1.275	0.47	3.75	409	1665	0.16	0.175	20.3	1.125	8.62	2.81
E886049		0.14	25.4	0.49	0.0385	1.775	0.43	2.92	425	1025	0.15	0.131	23.8	0.993	7.48	2.50
E886050		0.02			0.0055	0.038	2.87	4.20	370	102.0	0.50	0.118	17.40	0.262	30.1	18.15
E886051		0.16	27.5	0.46	0.0882	0.807	0.47	2.65	414	1235	0.16	0.128	17.80	1.100	7.69	2.96
E886052		0.18	22.2	0.45	0.0281	2.12	0.33	1.84	501	4190	0.12	0.095	22.4	1.015	6.08	2.26
E886053		0.20	24.1	0.48	0.0442	2.36	0.39	2.20	318	2220	0.12	0.083	21.2	0.912	4.55	3.89
E886054		0.14	21.3	0.41	0.0599	2.20	0.52	2.53	363	3330	0.15	0.117	22.0	1.060	6.59	3.56
E886055		0.14	20.5	0.31	0.0486	2.37	0.58	2.11	329	3790	0.11	0.205	20.9	0.879	4.85	3.87
E886056		0.24	26.3	0.43	0.0735	1.890	0.30	2.06	456	2870	0.12	0.151	20.7	0.926	5.15	2.29
E886057		0.18	23.2	0.38	0.128	2.06	0.45	3.13	400	2780	0.18	0.141	22.4	1.285	8.43	3.31
E886058		0.18	30.6	0.54	0.0678	1.025	0.29	2.68	514	1915	0.12	0.113	19.90	0.614	5.57	2.26
E886059		0.12	23.9	0.41	0.0441	1.260	0.37	2.43	536	2170	0.14	0.129	19.95	0.905	7.41	2.84
E886060		0.02			0.0086	0.040	2.94	4.22	370	104.5	0.50	0.113	17.90	0.266	30.6	18.10
E886061		0.16	30.2	0.57	0.0377	3.11	0.30	2.15	465	3550	0.11	0.094	19.20	0.962	5.21	4.25
E886062		0.18	27.7	0.51	0.0814	2.67	0.35	3.27	346	3440	0.10	0.092	24.2	1.550	5.32	10.85
E886063		0.26	28.9	0.48	0.0220	2.48	0.23	1.58	444	2970	0.06	0.055	20.4	2.33	3.16	6.42
E886064		0.20	29.9	0.40	0.112	2.92	0.29	2.03	426	2320	0.09	0.064	20.3	1.240	3.69	6.73
E886065		0.20	30.5	0.44	0.0597	2.23	0.24	1.84	398	2490	0.06	0.070	19.45	1.150	3.21	2.79
E886066		0.12	25.6	0.40	0.0202	1.865	0.26	3.54	325	3510	0.10	0.098	21.3	0.966	5.55	5.13
E886067		0.26	30.4	0.55	0.0473	2.03	0.39	3.14	445	1870	0.13	0.131	20.5	1.135	7.10	2.50
E886068		0.22	38.6	0.62	0.0925	3.59	0.59	3.35	371	1850	0.21	0.180	21.9	1.185	11.30	3.18
E886069		0.24	38.8	0.66	0.160	2.79	0.40	2.09	350	1840	0.10	0.079	22.4	1.460	4.66	11.75
E886070		0.02			0.0144	0.038	2.86	4.21	349	105.0	0.48	0.113	17.35	0.266	30.5	18.65
E886071		0.22	38.5	0.61	0.0257	2.37	0.24	1.52	400	2740	0.07	0.076	22.6	1.230	3.61	2.91
E886072		0.22	38.3	0.74	0.0417	2.57	0.43	2.02	330	3350	0.10	0.062	23.0	3.29	3.56	4.92
E886073		0.26	30.2	0.57	0.0777	2.01	0.42	3.12	377	2660	0.17	0.128	23.0	1.240	6.97	3.20
E886074		0.26	30.1	0.78	0.0826	0.831	0.42	3.15	374	2080	0.15	0.129	25.4	0.801	7.31	2.68
E886075		0.26	38.9	0.92	0.0819	0.980	0.46	3.07	349	2680	0.17	0.142	24.3	0.820	9.48	3.25
E886076		0.22	29.7	0.60	0.0816	1.530	0.46	3.24	405	2750	0.17	0.145	23.4	0.944	9.26	3.11
E886077		0.22	29.8	0.66	0.0558	1.190	0.34	2.56	341	3440	0.13	0.123	24.8	0.703	6.73	2.17
E886078		0.26	39.4	0.67	0.113	1.535	0.33	2.40	348	3120	0.13	0.104	27.3	0.660	5.95	2.06
E886079		0.20	30.3	0.75	0.0570	0.818	0.42	3.12	326	2560	0.15	0.138	24.9	0.733	7.81	2.55
E886080		0.02			0.0049	0.038	2.84	4.55	365	103.5	0.51	0.119	17.60	0.256	28.1	18.95





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To: **GOLDCORP INC - MUSSELWHITE  
 MUSSELWHITE MINE  
 PO BOX 7500  
 THUNDER BAY ON P7B 6S8**

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 Total # Pages: 6 (A - D)  
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 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
LOD		0.01	0.005	0.01	1	0.004	0.005	0.002	0.001	0.005	0.01	0.002	0.1	0.001	0.1	0.01
E886041		4.67	4.08	157.0	3700	0.736	0.009	0.014	<0.001	0.008	>10.0	2.42	3.0	3.16	14550	0.99
E886042		7.20	4.05	210	6200	1.195	0.021	0.014	0.001	0.007	>10.0	4.13	3.5	2.58	29200	0.81
E886043		4.20	10.40	181.0	3400	0.676	0.007	0.008	0.001	0.008	>10.0	2.14	3.3	3.32	17600	0.49
E886044		5.96	3.46	163.5	5900	0.937	0.014	0.014	<0.001	0.007	9.86	3.17	2.5	2.34	31700	0.66
E886045		4.61	4.82	168.0	4100	0.764	0.008	0.014	<0.001	0.007	>10.0	2.75	4.3	2.52	17250	0.89
E886046		6.98	7.24	178.5	6000	1.095	0.018	0.014	<0.001	0.010	9.41	3.86	3.1	2.36	30500	0.95
E886047		4.78	3.31	81.6	4100	0.775	0.012	0.009	<0.001	0.009	9.55	2.65	3.7	2.10	8970	0.83
E886048		7.28	2.25	181.5	6900	1.260	0.020	0.014	0.002	0.012	>10.0	4.54	3.3	2.35	26300	0.83
E886049		6.55	5.73	179.5	6000	1.160	0.014	0.011	<0.001	0.011	8.66	3.95	2.8	2.47	20700	0.76
E886050		155.0	1.040	79.1	25000	6.70	0.051	0.289	<0.001	0.035	1.22	14.10	11.8	1.930	1095	0.88
E886051		7.48	4.15	199.0	6600	1.205	0.009	0.008	<0.001	0.015	>10.0	4.02	3.0	3.68	30100	0.82
E886052		5.41	2.73	166.5	4600	0.925	0.016	0.023	<0.001	0.007	>10.0	3.21	3.7	2.58	25300	0.58
E886053		4.60	24.0	180.0	3800	0.698	0.009	0.015	0.001	0.008	>10.0	2.43	5.0	3.41	13300	0.58
E886054		6.06	12.50	160.5	5400	1.035	0.016	0.013	<0.001	<0.005	9.29	3.55	5.4	2.33	17150	0.85
E886055		5.78	68.6	246	4300	0.795	0.016	0.008	<0.001	0.006	>10.0	2.60	14.0	3.36	12300	1.27
E886056		5.52	3.64	206	4300	0.786	0.011	0.011	<0.001	0.009	>10.0	2.72	3.2	3.02	24300	0.56
E886057		7.91	1.950	217	7400	1.275	0.022	0.014	<0.001	0.015	8.85	4.46	4.5	2.15	21000	0.78
E886058		5.33	1.180	146.5	4200	0.767	0.008	0.014	<0.001	0.010	>10.0	2.99	2.6	2.70	20200	0.52
E886059		6.34	2.15	160.0	6100	0.987	0.015	0.009	<0.001	0.010	>10.0	3.90	3.2	2.98	22900	0.71
E886060		150.5	1.195	79.6	23700	6.60	0.046	0.286	<0.001	0.030	1.26	14.45	12.9	1.930	1090	0.89
E886061		5.07	3.77	209	4200	0.787	0.010	0.015	0.002	0.010	>10.0	2.75	3.0	3.04	21000	0.59
E886062		5.93	42.1	230	4200	0.771	0.010	0.019	<0.001	0.009	7.84	2.83	2.9	2.66	18500	0.58
E886063		3.19	7.73	250	2800	0.483	<0.005	0.016	0.001	<0.005	>10.0	1.725	3.1	3.85	27500	0.33
E886064		3.90	33.4	247	3300	0.565	<0.005	0.008	<0.001	0.008	>10.0	1.950	1.9	3.31	27800	0.50
E886065		3.82	7.86	267	3400	0.514	0.006	0.007	<0.001	0.005	>10.0	1.710	1.8	4.43	26400	0.36
E886066		4.99	3.83	181.0	4400	0.711	0.007	0.004	<0.001	0.010	>10.0	3.08	2.9	1.930	18450	0.63
E886067		6.95	2.88	172.0	6000	1.045	0.011	0.004	0.001	0.019	>10.0	3.73	2.9	2.26	32400	0.65
E886068		9.66	7.24	152.5	9400	1.625	0.022	0.010	<0.001	0.018	6.15	5.96	4.0	2.49	20000	0.95
E886069		6.38	21.4	174.5	3900	0.791	0.012	0.028	<0.001	0.007	7.26	2.43	3.4	3.38	34900	0.58
E886070		156.0	1.165	79.4	24000	6.59	0.063	0.284	<0.001	0.025	1.20	14.30	11.7	1.900	1080	0.86
E886071		3.79	19.85	204	3300	0.619	0.011	0.008	<0.001	0.006	9.26	1.880	1.9	3.00	36400	0.36
E886072		5.08	4.57	231	4300	0.648	0.007	0.015	<0.001	<0.005	8.56	1.980	2.3	2.26	20800	0.51
E886073		7.55	3.45	161.5	6100	1.100	0.012	0.015	<0.001	0.010	9.03	3.78	3.7	2.61	26100	0.73
E886074		8.42	2.13	106.5	7600	1.155	0.019	0.025	<0.001	0.014	6.76	3.90	4.5	1.850	16450	0.76
E886075		9.60	1.150	103.0	8900	1.330	0.016	0.023	<0.001	0.009	6.84	5.15	6.2	1.840	10400	1.27
E886076		9.01	1.380	112.5	8200	1.240	0.022	0.018	<0.001	0.010	7.92	5.25	4.7	2.02	14600	0.92
E886077		7.37	1.070	78.5	6200	0.949	0.011	0.032	<0.001	0.006	8.06	3.68	11.7	1.990	11050	0.74
E886078		6.61	2.96	66.0	6200	0.921	0.016	0.041	<0.001	0.009	6.35	3.24	2.7	1.750	6630	0.71
E886079		8.97	1.110	66.5	8400	1.195	0.025	0.049	<0.001	0.011	7.94	4.20	5.2	1.620	7770	0.81
E886080		162.0	1.075	79.6	24100	6.23	0.042	0.298	<0.001	0.029	1.21	13.50	12.1	1.900	1085	0.89



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To: GOLDCORP INC - MUSSELWHITE  
 MUSSELWHITE MINE  
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 THUNDER BAY ON P7B 6S8

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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	
		Na %	Nb ppm	Ni ppm	P %	Pb ppm	Pd ppm	Pt ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm
		0.001	0.002	0.04	0.001	0.01	0.001	0.002	0.01	0.001	0.01	0.01	0.005	0.01	0.02	
E886041		0.028	0.158	6.81	2.14	9.99	0.001	<0.002	327	<0.001	0.52	0.44	1.37	0.417	0.32	425
E886042		0.054	0.196	13.15	2.57	19.95	<0.001	<0.002	313	0.002	0.78	0.50	1.93	0.694	0.51	284
E886043		0.027	0.136	32.2	2.84	8.91	<0.001	<0.002	480	0.001	0.90	0.35	1.35	0.336	0.29	646
E886044		0.040	0.154	16.50	2.54	18.10	0.001	<0.002	302	0.001	0.63	0.63	1.57	0.580	0.45	269
E886045		0.031	0.156	10.85	2.69	16.40	<0.001	<0.002	316	<0.001	0.69	0.53	1.32	0.525	0.33	567
E886046		0.078	0.190	11.90	3.28	27.7	0.002	<0.002	292	0.001	0.82	1.10	1.73	0.765	0.50	574
E886047		0.047	0.159	6.38	2.36	14.25	<0.001	<0.002	239	0.001	0.60	0.62	1.42	0.422	0.37	1380
E886048		0.055	0.192	14.15	3.15	39.0	0.001	0.002	273	0.001	0.74	0.87	1.92	0.770	0.60	425
E886049		0.043	0.170	14.40	2.18	18.10	0.002	<0.002	222	<0.001	0.69	0.58	1.67	0.644	0.54	188.5
E886050		0.564	0.053	143.0	0.245	8.23	<0.001	0.003	20.0	0.001	0.47	0.16	11.30	0.434	0.84	1035
E886051		0.051	0.192	14.80	2.96	18.55	<0.001	<0.002	289	0.001	0.77	0.68	1.87	0.614	0.60	254
E886052		0.044	0.151	9.25	2.06	14.95	0.001	<0.002	232	<0.001	0.63	0.58	1.65	0.521	0.44	534
E886053		0.022	0.143	37.3	2.85	10.35	<0.001	<0.002	540	0.001	1.22	0.46	1.39	0.532	0.30	947
E886054		0.049	0.178	27.8	2.23	16.05	<0.001	0.002	371	<0.001	0.71	0.59	1.69	0.679	0.46	815
E886055		0.036	0.162	107.0	3.21	12.05	<0.001	<0.002	580	<0.001	0.76	0.38	1.35	0.649	0.36	1065
E886056		0.035	0.142	12.00	2.20	12.70	<0.001	<0.002	269	0.001	0.88	0.38	1.51	0.494	0.39	409
E886057		0.050	0.188	13.95	2.42	27.6	0.002	<0.002	175.5	<0.001	0.74	0.55	1.84	0.830	0.61	526
E886058		0.020	0.145	7.94	2.07	13.85	<0.001	<0.002	214	<0.001	0.73	0.49	1.46	0.400	0.45	388
E886059		0.036	0.171	12.10	2.26	18.60	0.002	<0.002	187.5	0.001	0.92	0.72	1.74	0.551	0.49	452
E886060		0.579	0.051	140.5	0.251	8.04	0.001	0.003	20.4	0.001	0.48	0.16	11.60	0.414	0.82	1060
E886061		0.040	0.163	31.4	2.36	12.55	0.002	<0.002	363	<0.001	0.74	0.69	1.57	0.518	0.40	621
E886062		0.041	0.164	79.9	2.46	14.35	<0.001	<0.002	431	<0.001	0.73	0.67	1.38	0.433	0.36	664
E886063		0.034	0.115	29.5	3.19	7.45	0.001	<0.002	500	0.001	0.85	0.53	1.13	0.291	0.22	497
E886064		0.023	0.133	40.3	2.91	9.84	0.001	<0.002	430	<0.001	0.73	0.47	1.12	0.313	0.27	281
E886065		0.039	0.118	22.6	3.36	10.75	<0.001	<0.002	402	0.001	0.72	0.83	1.15	0.300	0.29	390
E886066		0.052	0.162	25.8	3.26	13.20	0.003	0.002	337	<0.001	0.70	0.94	1.36	0.458	0.37	924
E886067		0.065	0.190	12.90	2.70	26.1	0.003	<0.002	296	<0.001	1.03	1.18	1.83	0.860	0.56	301
E886068		0.076	0.196	14.50	1.875	30.2	<0.001	<0.002	177.5	0.001	0.77	1.20	2.16	0.948	0.70	317
E886069		0.029	0.262	57.1	2.29	11.20	<0.001	<0.002	411	0.001	0.92	0.51	1.33	0.669	0.33	398
E886070		0.558	0.050	142.5	0.243	8.04	<0.001	<0.002	19.90	<0.001	0.46	0.16	11.30	0.487	0.82	1025
E886071		0.036	0.168	19.85	3.78	11.10	<0.001	<0.002	374	0.001	0.74	0.65	1.14	0.542	0.29	331
E886072		0.032	0.134	24.6	2.72	13.95	0.003	<0.002	412	<0.001	0.63	0.61	1.24	0.569	0.22	766
E886073		0.076	0.176	13.60	2.10	22.7	0.001	<0.002	216	<0.001	0.65	1.04	1.86	0.635	0.45	680
E886074		0.063	0.154	9.34	1.530	25.7	0.001	<0.002	96.1	<0.001	0.62	0.66	1.83	0.657	0.50	862
E886075		0.054	0.169	12.15	1.615	38.2	0.001	<0.002	71.1	0.001	0.65	0.78	2.08	0.717	0.51	685
E886076		0.057	0.165	10.00	1.785	30.2	<0.001	<0.002	89.6	<0.001	0.75	0.64	1.99	0.713	0.56	742
E886077		0.047	0.163	7.93	1.805	27.4	<0.001	<0.002	99.1	<0.001	0.63	0.73	1.58	0.672	0.40	780
E886078		0.049	0.140	7.51	1.655	21.5	0.003	<0.002	95.0	<0.001	0.50	0.53	1.39	0.536	0.42	1130
E886079		0.050	0.159	9.39	1.500	33.0	0.002	<0.002	99.2	<0.001	0.65	0.62	1.87	0.747	0.50	758
E886080		0.577	0.047	149.5	0.243	8.18	0.001	<0.002	19.75	<0.001	0.45	0.19	11.65	0.376	0.85	1060



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To: GOLDCORP INC - MUSSELWHITE  
 MUSSELWHITE MINE  
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 Finalized Date: 25-OCT-2018  
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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	
		Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
		0.001	0.02	0.002	0.001	0.002	0.005	0.05	0.01	0.003	0.1	0.02
E886041		<0.001	<0.02	0.507	0.009	0.057	0.144	7.75	0.22	1.530	2850	0.51
E886042		0.006	<0.02	0.812	0.014	0.058	0.228	12.55	0.31	2.75	3220	0.52
E886043		<0.001	0.06	0.451	0.008	0.117	0.142	7.05	0.15	1.135	2210	0.32
E886044		<0.001	0.06	0.612	0.011	0.071	0.195	9.83	0.28	1.960	2280	0.38
E886045		<0.001	<0.02	0.513	0.009	0.030	0.155	7.94	0.19	1.710	3060	0.48
E886046		0.005	<0.02	0.691	0.012	0.121	0.240	11.45	0.30	2.21	2210	0.50
E886047		<0.001	0.02	0.533	0.009	0.066	0.149	8.14	0.26	1.600	4130	0.43
E886048		0.005	<0.02	0.889	0.013	0.436	0.274	13.05	0.28	2.79	2400	0.45
E886049		<0.001	0.08	0.734	0.012	0.191	0.212	11.10	0.30	2.35	2730	0.33
E886050		<0.001	0.02	3.95	0.024	0.151	0.609	59.3	0.09	11.55	194.5	10.05
E886051		0.006	<0.02	0.848	0.015	0.196	0.230	12.30	0.34	2.41	3230	0.38
E886052		<0.001	<0.02	0.621	0.010	0.049	0.170	9.05	0.22	1.955	3700	0.72
E886053		<0.001	0.02	0.461	0.008	0.651	0.138	7.28	0.21	1.330	2310	0.57
E886054		<0.001	0.02	0.723	0.012	0.995	0.191	10.35	0.31	1.980	3260	0.55
E886055		<0.001	0.02	0.518	0.010	1.035	0.143	7.92	0.27	1.500	2800	0.34
E886056		<0.001	<0.02	0.563	0.009	0.131	0.154	8.14	0.26	1.625	2950	0.44
E886057		<0.001	0.02	0.850	0.014	0.111	0.251	12.85	0.42	2.57	3120	0.51
E886058		<0.001	<0.02	0.614	0.009	0.085	0.155	7.81	0.24	1.700	2690	0.45
E886059		<0.001	<0.02	0.700	0.012	0.100	0.199	10.25	0.34	2.36	3180	0.44
E886060		<0.001	0.04	3.93	0.023	0.136	0.643	53.3	0.09	11.40	197.0	9.30
E886061		<0.001	<0.02	0.576	0.009	0.167	0.150	7.71	0.23	1.620	2590	0.46
E886062		<0.001	0.02	0.554	0.009	1.075	0.160	7.77	0.22	1.645	2060	0.54
E886063		<0.001	<0.02	0.336	0.006	1.300	0.104	4.78	0.17	0.926	2460	0.44
E886064		<0.001	0.04	0.407	0.007	2.91	0.116	6.18	0.19	1.210	2990	0.33
E886065		<0.001	0.02	0.310	0.007	0.455	0.105	5.35	0.18	0.911	2600	0.39
E886066		<0.001	<0.02	0.493	0.008	0.263	0.165	7.30	0.23	1.655	2670	0.24
E886067		0.005	0.02	0.669	0.013	0.039	0.232	11.05	0.30	2.14	3180	0.30
E886068		0.005	0.02	1.100	0.018	0.070	0.295	15.95	0.42	3.38	3460	0.46
E886069		<0.001	<0.02	0.441	0.008	0.095	0.126	7.20	0.17	1.350	2880	0.90
E886070		0.005	0.02	3.92	0.023	0.142	0.629	54.7	0.07	11.30	192.5	8.99
E886071		<0.001	0.04	0.378	0.007	0.062	0.120	6.12	0.20	1.030	2880	0.41
E886072		<0.001	<0.02	0.338	0.008	0.103	0.114	6.66	0.23	0.981	2210	0.36
E886073		<0.001	0.07	0.785	0.014	0.040	0.207	12.20	0.27	2.43	3070	0.54
E886074		0.005	0.03	0.767	0.014	0.042	0.210	13.45	0.28	2.58	2550	1.00
E886075		<0.001	0.05	0.913	0.016	0.058	0.245	15.45	0.33	3.31	2730	0.78
E886076		<0.001	<0.02	0.883	0.015	0.040	0.240	14.50	0.36	3.52	2960	0.44
E886077		<0.001	<0.02	0.650	0.011	0.038	0.181	11.00	0.28	2.34	3740	1.25
E886078		<0.001	0.02	0.619	0.011	0.039	0.163	10.45	0.20	2.00	3710	1.54
E886079		0.005	0.02	0.822	0.014	0.029	0.209	13.95	0.48	2.70	2710	1.56
E886080		0.005	0.03	4.14	0.022	0.138	0.614	57.1	0.07	11.50	196.5	9.73



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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	WEI-21	VEG-ASH01	VEG-ASH01	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Recvd Wt. kg	WT. SAMP g	WT. ASH g	Au ppm	Ag ppm	Al %	As ppm	B g	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm
		0.02	0.01	0.01	0.0002	0.001	0.01	0.01	1	0.1	0.01	0.001	0.01	0.001	0.003	0.002
E886081		0.22	30.9	0.62	0.0888	1.250	0.51	3.28	360	2850	0.16	0.150	25.1	0.907	9.15	2.91
E886082		0.28	29.6	0.56	0.0829	1.190	0.30	2.46	372	2960	0.10	0.088	25.4	0.526	5.54	1.900
E886201		0.06	21.6	0.28	0.0731	0.148	0.32	3.19	575	842	0.09	0.132	19.25	0.777	6.02	2.01
E886202		0.06	20.1	0.31	0.0466	0.206	0.19	2.61	524	644	0.05	0.094	23.1	0.784	3.96	1.430
E886203		0.08	21.3	0.29	0.0255	0.096	0.17	1.74	582	860	0.04	0.071	18.90	0.469	3.21	1.020
E886204		0.08	29.0	0.38	0.0651	0.147	0.25	2.56	575	1215	0.08	0.128	22.2	0.676	6.12	1.520
E886205		0.08	23.4	0.31	0.0313	0.206	0.22	2.25	624	1070	0.07	0.117	20.0	2.04	4.79	1.380
E886206		0.08	22.4	0.34	0.0188	0.124	0.15	1.78	461	1960	0.04	0.058	23.2	0.432	2.35	1.030
E886207		0.08	32.8	0.44	0.0513	0.126	0.26	2.00	652	520	0.07	0.118	22.1	0.687	5.36	1.510
E886208		0.08	26.5	0.28	0.104	0.114	0.21	1.81	613	596	0.07	0.088	19.75	0.539	3.94	1.565
E886209		0.10	48.5	0.48	0.0629	0.096	0.25	1.56	658	714	0.06	0.099	20.3	0.630	3.57	4.62
E886210		0.02			0.0059	0.040	2.85	4.24	366	101.0	0.45	0.113	17.95	0.263	29.4	18.20
E886211		0.12	47.6	0.64	0.0368	0.164	0.19	1.47	548	840	0.05	0.057	18.10	3.77	3.19	9.45
E886212		0.12	46.6	0.57	0.0531	0.325	0.29	2.88	543	1105	0.06	0.119	23.0	0.552	5.39	1.755
E886213		0.08	35.0	0.48	0.0832	0.154	0.34	3.02	558	899	0.08	0.118	21.2	0.629	5.51	1.750
E886214		0.12	46.1	0.62	0.111	0.142	0.25	1.98	614	765	0.06	0.092	20.5	0.466	4.33	1.430
E886215		0.12	53.0	0.66	0.0729	0.163	0.33	2.14	515	956	0.08	0.111	20.0	0.583	6.54	3.68
E886216		0.08	37.7	0.48	0.181	0.207	0.25	2.50	600	418	0.07	0.115	19.25	0.942	4.70	7.87
E886217		0.16	64.9	0.97	0.0744	0.255	0.21	1.44	492	2260	0.05	0.077	25.4	0.438	3.54	2.99
E886218		0.10	40.9	0.49	0.345	0.191	0.26	2.43	527	572	0.07	0.126	21.4	4.71	4.69	3.59
E886219		0.10	40.3	0.46	0.173	0.133	0.23	3.01	618	447	0.08	0.152	21.1	1.600	4.63	2.07
E886220		0.02			0.0086	0.042	2.88	4.54	368	102.0	0.44	0.114	17.75	0.253	29.4	17.30
E886221		0.12	31.4	0.28	0.0718	0.150	0.26	2.59	611	887	0.08	0.134	20.9	0.593	6.50	1.555
E886222		0.12	41.5	0.37	0.0429	0.103	0.21	1.83	613	821	0.06	0.095	20.4	0.548	4.47	1.470
E886223		0.12	42.1	0.55	0.0319	0.149	0.25	2.66	573	1030	0.07	0.110	21.5	0.930	4.85	1.725
E886224		0.12	37.4	0.34	0.145	0.279	0.35	3.02	603	902	0.09	0.143	18.60	0.618	7.06	2.21
E886225		0.10	31.6	0.26	0.0627	0.213	0.29	3.16	616	866	0.09	0.109	18.65	0.586	5.37	2.31
E886226		0.16	40.3	0.37	0.0347	0.143	0.22	2.20	587	1285	0.05	0.087	22.4	0.433	3.90	1.620
E886227		0.16	30.5	0.28	0.0368	0.126	0.33	2.63	657	587	0.12	0.109	18.85	0.744	5.96	3.28
E886228		0.08	30.3	0.34	0.0253	0.177	0.21	2.61	642	410	0.09	0.098	19.60	0.658	4.39	1.495
E886229		0.14	40.6	0.50	0.0274	0.159	0.19	2.54	609	697	0.07	0.077	21.3	0.515	3.45	1.310
E886230		0.02			0.0060	0.042	2.93	4.56	362	104.5	0.54	0.105	18.00	0.266	28.1	18.80
E886231		0.06	23.5	0.30	0.0320	0.135	0.18	3.12	480	391	0.06	0.070	18.40	0.627	3.29	1.565
E886232		0.06	20.5	0.29	0.0285	0.131	0.12	3.40	505	618	0.04	0.049	19.90	0.660	2.24	1.830
E886233		0.08	25.4	0.42	0.0179	0.137	0.12	3.34	466	859	0.05	0.050	20.5	0.485	2.03	1.375
E886234		0.10	38.7	0.56	0.0149	0.120	0.17	3.44	477	772	0.03	0.043	14.40	0.943	2.18	1.815
E886235		0.14	30.8	0.34	0.0173	0.149	0.22	2.50	602	491	0.06	0.072	17.95	0.604	3.71	1.370
E886236		0.10	39.7	0.49	0.0681	0.109	0.19	2.37	516	586	0.07	0.067	18.35	0.582	3.21	1.320
E886237		0.14	38.9	0.45	0.0638	0.171	0.22	3.16	569	511	0.07	0.070	22.9	0.442	3.38	1.785
E886238		0.12	34.6	0.45	0.0296	0.151	0.17	2.59	562	798	0.07	0.066	20.7	0.373	3.23	1.085





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To: **GOLDCORP INC - MUSSELWHITE**  
**MUSSELWHITE MINE**  
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**THUNDER BAY ON P7B 6S8**

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 Total # Pages: 6 (A - D)  
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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
LOD		0.01	0.005	0.01	1	0.004	0.005	0.002	0.001	0.005	0.01	0.002	0.1	0.001	0.1	0.01
E886081		9.71	2.15	83.8	8900	1.410	0.027	0.030	<0.001	0.013	6.52	4.90	4.5	1.980	13200	0.84
E886082		6.37	0.917	56.0	5700	0.857	0.012	0.038	<0.001	0.011	8.67	3.04	9.0	2.38	7820	0.85
E886201		7.95	2.50	153.0	6600	0.947	0.009	0.011	<0.001	0.008	9.86	3.12	3.0	4.13	>50000	1.06
E886202		5.12	1.325	105.0	4100	0.544	0.009	0.011	<0.001	0.005	9.79	2.01	3.1	3.40	42700	1.11
E886203		3.74	2.72	99.6	3100	0.485	0.009	0.017	<0.001	0.006	>10.0	1.695	1.7	3.36	>50000	0.68
E886204		5.66	1.300	78.0	5100	0.738	0.014	0.012	<0.001	<0.005	9.78	3.18	3.0	3.94	>50000	1.08
E886205		5.67	4.44	146.0	3900	0.614	0.010	0.011	<0.001	0.007	>10.0	2.52	2.9	3.91	40700	2.78
E886206		4.86	1.265	132.5	2500	0.363	<0.005	0.016	<0.001	<0.005	9.39	1.250	2.0	3.52	37100	0.61
E886207		5.27	11.80	243	4700	0.745	0.018	0.009	<0.001	0.005	9.77	2.69	1.7	4.00	44300	0.87
E886208		8.91	37.3	289	4000	0.561	0.016	0.018	<0.001	0.006	>10.0	2.01	2.2	4.38	33000	0.87
E886209		4.48	15.05	322	4300	0.512	0.011	0.007	<0.001	0.006	>10.0	1.885	1.3	4.79	20600	1.01
E886210		155.5	1.170	79.7	24100	6.46	0.053	0.288	<0.001	0.035	1.20	14.10	10.5	1.900	1085	0.86
E886211		3.58	14.15	363	3100	0.399	0.007	0.014	<0.001	<0.005	>10.0	2.09	1.3	5.01	48900	1.09
E886212		10.10	8.99	246	4600	0.642	0.011	0.006	<0.001	0.006	9.79	2.87	1.4	3.57	23200	0.67
E886213		7.73	6.72	252	5400	0.806	0.010	0.004	<0.001	0.006	9.98	2.82	1.8	4.07	>50000	0.58
E886214		4.84	8.16	249	4600	0.705	0.008	0.007	<0.001	<0.005	>10.0	2.24	1.6	3.99	>50000	0.63
E886215		5.29	13.90	266	4700	0.783	0.011	0.006	<0.001	<0.005	>10.0	3.74	2.8	3.96	>50000	0.65
E886216		38.4	23.4	318	4800	0.658	0.021	0.004	<0.001	0.006	>10.0	2.29	2.5	3.83	>50000	0.64
E886217		3.29	23.2	212	3000	0.486	0.009	0.025	<0.001	<0.005	8.60	1.920	1.5	3.54	44400	0.63
E886218		4.60	2.09	283	4400	0.623	0.007	0.009	<0.001	0.011	>10.0	2.38	1.4	2.97	24200	0.69
E886219		5.77	2.39	341	4500	0.643	0.010	0.002	<0.001	0.008	>10.0	2.31	1.5	3.25	25100	0.98
E886220		151.5	1.185	77.5	24100	6.79	0.052	0.283	<0.001	0.028	1.22	14.15	10.3	1.900	1120	0.86
E886221		5.52	2.01	207	5000	0.745	0.010	0.013	<0.001	0.012	>10.0	3.31	1.4	3.80	36100	0.62
E886222		3.90	2.02	239	3900	0.562	0.005	0.017	<0.001	<0.005	>10.0	2.27	1.2	3.88	29300	0.52
E886223		4.79	2.43	260	4300	0.622	0.010	0.017	<0.001	0.005	>10.0	2.51	1.3	4.04	29000	0.64
E886224		9.82	16.30	231	5800	0.881	0.010	0.012	<0.001	0.006	>10.0	3.59	1.7	3.91	>50000	0.84
E886225		6.08	56.2	292	4100	0.612	0.009	0.006	<0.001	0.007	>10.0	2.73	2.5	4.12	>50000	0.73
E886226		9.80	12.80	211	2900	0.496	0.008	0.017	<0.001	0.007	>10.0	2.04	1.4	3.20	>50000	0.60
E886227		7.05	12.65	289	4200	0.795	0.015	0.006	0.002	0.011	>10.0	2.97	2.3	4.45	>50000	1.00
E886228		6.08	2.81	277	3900	0.627	0.011	0.009	0.001	0.005	>10.0	2.08	1.6	4.16	25400	0.71
E886229		5.20	3.93	238	3400	0.493	0.009	0.006	0.003	<0.005	>10.0	1.740	1.7	4.04	28300	0.81
E886230		151.5	1.095	83.2	23900	7.14	0.062	0.240	<0.001	0.032	1.28	13.15	12.3	1.930	1100	0.85
E886231		6.94	3.50	252	3300	0.497	0.010	0.005	<0.001	<0.005	>10.0	1.535	1.5	3.39	40500	0.79
E886232		4.52	10.25	116.5	2600	0.349	0.005	0.006	<0.001	<0.005	>10.0	1.155	1.5	3.62	37700	1.04
E886233		4.57	3.30	148.5	2200	0.356	0.008	0.004	0.001	<0.005	>10.0	1.035	1.5	3.97	20200	2.52
E886234		4.19	4.74	193.5	2300	0.372	0.006	0.002	<0.001	0.005	>10.0	1.080	1.2	3.90	>50000	2.92
E886235		4.50	7.64	259	3400	0.493	0.008	0.009	0.002	<0.005	>10.0	1.760	1.5	4.24	>50000	3.92
E886236		6.48	5.72	269	2800	0.449	0.008	0.002	<0.001	<0.005	>10.0	1.585	1.3	3.81	>50000	1.42
E886237		5.42	39.6	269	3400	0.478	0.009	0.007	0.002	<0.005	>10.0	1.705	1.9	2.82	46200	0.75
E886238		5.35	4.57	243	3300	0.508	0.008	0.010	0.001	<0.005	9.99	1.625	2.0	3.73	>50000	1.44



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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	
		Na %	Nb ppm	Ni ppm	P %	Pb ppm	Pd ppm	Pt ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm
E886081		0.069	0.189	10.05	1.710	32.3	0.002	<0.002	106.5	<0.001	0.70	0.76	2.14	0.809	0.59	773
E886082		0.052	0.144	6.20	1.635	23.3	0.004	<0.002	125.5	<0.001	0.57	0.58	1.46	0.465	0.34	1060
E886201		0.067	0.166	10.20	2.84	31.0	0.001	<0.002	208	<0.001	1.15	1.46	1.40	0.646	0.55	286
E886202		0.088	0.111	5.44	2.60	26.4	0.002	<0.002	171.0	0.001	1.33	1.46	1.02	0.617	0.39	394
E886203		0.051	0.089	4.40	2.65	17.15	0.001	<0.002	270	<0.001	1.20	0.86	0.88	0.561	0.31	228
E886204		0.051	0.133	5.48	2.28	30.6	0.001	<0.002	245	<0.001	0.89	1.09	1.16	0.377	0.46	540
E886205		0.057	0.119	5.89	2.63	25.3	0.002	<0.002	322	0.001	1.01	1.11	1.15	0.376	0.40	307
E886206		0.037	0.082	5.61	2.84	14.55	0.003	<0.002	135.5	<0.001	0.73	0.59	0.70	0.313	0.24	287
E886207		0.048	0.137	8.37	2.47	20.9	<0.001	<0.002	430	<0.001	1.23	0.61	1.19	0.608	0.45	480
E886208		0.042	0.118	23.6	3.06	16.65	<0.001	<0.002	620	<0.001	1.15	0.53	0.99	0.711	0.33	440
E886209		0.040	0.128	41.7	4.15	16.10	<0.001	<0.002	820	<0.001	1.15	0.71	0.85	0.352	0.34	751
E886210		0.584	0.045	136.5	0.246	8.19	<0.001	0.002	19.75	0.001	0.45	0.16	11.30	0.415	0.81	1070
E886211		0.034	0.101	31.8	4.21	11.30	0.002	<0.002	980	0.001	1.06	0.50	0.68	0.362	0.22	514
E886212		0.035	0.128	17.05	2.89	21.4	0.002	<0.002	384	<0.001	1.04	0.80	1.06	0.492	0.42	233
E886213		0.049	0.150	20.4	2.86	20.2	<0.001	<0.002	403	<0.001	1.16	0.62	1.24	0.508	0.45	252
E886214		0.042	0.144	8.42	3.34	17.40	0.001	<0.002	431	0.001	1.03	0.65	1.03	0.302	0.39	454
E886215		0.037	0.164	98.2	3.45	17.35	0.002	<0.002	820	<0.001	0.85	0.56	1.13	0.486	0.42	544
E886216		0.054	0.138	103.5	4.21	20.6	<0.001	<0.002	700	0.001	1.37	1.29	1.00	0.591	0.39	551
E886217		0.030	0.101	39.0	2.65	10.65	<0.001	<0.002	560	<0.001	0.65	0.42	0.83	0.235	0.32	502
E886218		0.051	0.151	38.7	3.80	26.9	<0.001	<0.002	412	<0.001	1.23	0.61	0.98	0.367	0.39	278
E886219		0.050	0.165	49.4	4.18	17.65	<0.001	<0.002	430	<0.001	1.39	0.76	1.03	0.358	0.44	438
E886220		0.586	0.045	134.0	0.249	7.99	<0.001	0.004	19.20	0.001	0.46	0.17	11.25	0.462	0.78	1070
E886221		0.051	0.145	11.85	2.75	24.7	0.002	<0.002	285	<0.001	0.86	0.57	1.14	0.372	0.45	336
E886222		0.045	0.126	10.70	3.70	16.60	<0.001	<0.002	328	0.001	1.05	0.66	0.95	0.402	0.36	291
E886223		0.052	0.132	13.15	3.40	21.2	<0.001	<0.002	295	0.001	1.07	0.65	0.94	0.345	0.37	389
E886224		0.037	0.153	30.6	3.04	23.9	0.001	<0.002	510	0.001	1.08	0.82	1.15	0.453	0.65	339
E886225		0.046	0.137	116.0	3.52	22.7	0.002	<0.002	750	0.001	1.04	0.67	0.93	0.408	0.41	533
E886226		0.036	0.107	32.4	3.34	14.60	0.002	<0.002	630	<0.001	0.93	0.56	0.78	0.412	0.29	473
E886227		0.043	0.156	88.2	3.21	22.1	0.002	<0.002	620	<0.001	1.13	0.68	1.27	0.770	0.39	381
E886228		0.042	0.129	12.50	3.20	19.80	0.001	<0.002	411	<0.001	1.27	0.61	1.06	0.424	0.32	444
E886229		0.067	0.117	16.05	3.91	14.35	<0.001	<0.002	420	<0.001	1.01	0.94	0.96	0.319	0.38	458
E886230		0.554	0.047	141.5	0.259	8.01	0.002	0.004	21.3	0.001	0.46	0.13	13.50	0.411	0.78	1120
E886231		0.113	0.135	13.10	4.96	15.45	0.001	0.002	411	<0.001	1.45	1.35	0.88	0.583	0.40	519
E886232		0.104	0.101	8.40	4.20	12.95	0.004	<0.002	480	0.001	1.16	1.36	0.74	0.379	0.29	795
E886233		0.067	0.094	6.90	3.50	8.33	<0.001	<0.002	395	<0.001	0.98	0.80	0.82	0.249	0.30	792
E886234		0.076	0.085	12.25	>5.0	10.85	<0.001	<0.002	460	<0.001	1.05	1.02	0.68	0.199	0.28	321
E886235		0.056	0.120	13.20	4.03	18.90	0.001	<0.002	385	<0.001	1.28	0.69	0.85	0.252	0.33	458
E886236		0.052	0.100	12.65	3.81	15.05	<0.001	<0.002	446	<0.001	1.17	0.74	0.84	0.321	0.28	421
E886237		0.040	0.122	35.2	4.14	13.25	0.003	0.002	1040	<0.001	1.09	0.62	0.92	0.494	0.27	581
E886238		0.039	0.108	6.93	2.84	14.05	<0.001	<0.002	316	<0.001	0.85	0.67	0.94	0.248	0.34	301



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 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Ta ppm 0.001	Te ppm 0.02	Th ppm 0.002	Ti % 0.001	Tl ppm 0.002	U ppm 0.005	V ppm 0.05	W ppm 0.01	Y ppm 0.003	Zn ppm 0.1	Zr ppm 0.02
E886081		0.006	<0.02	0.899	0.017	0.036	0.245	15.40	0.31	3.01	3520	1.00
E886082		<0.001	0.02	0.555	0.011	0.021	0.149	9.63	0.28	1.845	5270	1.38
E886201		<0.001	<0.02	0.519	0.011	0.031	0.144	9.49	0.44	1.925	1130	0.38
E886202		<0.001	0.02	0.335	0.007	0.015	0.104	5.86	0.34	1.335	1210	0.44
E886203		<0.001	<0.02	0.288	0.005	0.018	0.087	4.51	0.22	1.090	1245	0.63
E886204		<0.001	<0.02	0.452	0.008	0.026	0.133	7.14	0.30	2.03	1755	0.55
E886205		<0.001	0.02	0.404	0.007	0.025	0.121	6.23	0.32	1.590	1135	0.48
E886206		<0.001	0.04	0.209	0.004	0.016	0.071	3.45	0.20	0.804	986	0.61
E886207		<0.001	0.04	0.450	0.008	0.021	0.143	7.41	0.28	1.820	1455	0.45
E886208		<0.001	0.02	0.346	0.006	0.022	0.108	6.09	0.25	1.310	1290	0.48
E886209		<0.001	0.02	0.284	0.006	0.060	0.103	5.47	0.22	1.225	1425	0.19
E886210		<0.001	0.05	4.13	0.023	0.136	0.627	54.4	0.07	11.30	196.0	9.07
E886211		<0.001	<0.02	0.222	0.005	0.059	0.083	4.31	0.24	0.863	1175	0.63
E886212		<0.001	0.02	0.430	0.007	0.026	0.136	6.61	0.26	1.695	1455	0.27
E886213		<0.001	0.02	0.473	0.009	0.033	0.140	7.59	0.60	1.980	1365	0.26
E886214		<0.001	0.02	0.377	0.008	0.111	0.119	6.89	0.30	1.430	1795	0.24
E886215		<0.001	0.05	0.478	0.009	0.302	0.146	6.89	0.22	1.745	1085	0.25
E886216		<0.001	0.03	0.348	0.008	0.089	0.138	6.67	0.27	1.610	1215	0.18
E886217		<0.001	<0.02	0.295	0.005	0.302	0.090	4.59	0.27	1.115	1360	0.92
E886218		<0.001	0.02	0.375	0.007	0.101	0.144	6.57	0.20	1.745	2290	0.29
E886219		<0.001	<0.02	0.418	0.007	0.140	0.158	6.63	0.27	1.765	2150	0.18
E886220		<0.001	<0.02	4.15	0.023	0.140	0.637	53.3	0.08	11.20	192.0	8.87
E886221		<0.001	<0.02	0.492	0.008	0.057	0.160	7.22	0.25	2.12	1985	0.36
E886222		<0.001	<0.02	0.316	0.006	0.022	0.114	5.60	0.16	1.490	1710	0.58
E886223		<0.001	0.04	0.368	0.006	0.035	0.135	7.62	0.22	1.620	1310	0.56
E886224		<0.001	0.02	0.511	0.009	0.285	0.155	7.47	0.27	2.18	1780	0.40
E886225		<0.001	0.06	0.424	0.006	0.537	0.152	5.61	0.24	1.690	1300	0.32
E886226		<0.001	0.02	0.318	0.005	0.241	0.102	4.39	0.23	1.230	1435	0.56
E886227		<0.001	0.02	0.438	0.008	0.108	0.156	7.70	0.24	2.13	1375	0.20
E886228		<0.001	0.04	0.341	0.006	0.052	0.115	6.87	0.75	1.540	1730	0.26
E886229		<0.001	0.04	0.257	0.005	0.051	0.096	5.41	0.66	1.160	1540	0.30
E886230		<0.001	0.03	4.06	0.024	0.151	0.643	64.1	0.08	11.75	196.5	7.52
E886231		<0.001	0.06	0.269	0.005	0.018	0.104	5.24	0.63	1.300	1370	0.14
E886232		<0.001	0.02	0.213	0.004	0.057	0.075	3.74	0.53	0.758	1640	0.35
E886233		<0.001	0.04	0.202	0.004	0.032	0.071	3.76	0.63	0.693	1075	0.17
E886234		<0.001	0.02	0.179	0.003	0.134	0.070	3.44	0.55	0.780	1305	0.12
E886235		<0.001	0.04	0.239	0.005	0.159	0.101	5.01	0.60	1.380	1565	0.30
E886236		<0.001	0.02	0.251	0.004	0.067	0.099	4.72	0.46	1.205	1150	0.25
E886237		<0.001	0.02	0.274	0.005	0.879	0.119	5.01	0.34	1.210	1145	0.24
E886238		<0.001	0.02	0.282	0.005	0.271	0.092	4.85	0.34	1.130	1630	0.46



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**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	WEI-21	VEG-ASH01	VEG-ASH01	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Recvd Wt. kg	WT. SAMP g	WT. ASH g	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm
E886239		0.14	30.6	0.39	0.118	0.119	0.28	2.48	585	520	0.10	0.099	19.80	0.580	5.17	1.405
E886240		0.02			0.0108	0.039	2.99	4.63	375	107.0	0.52	0.108	17.95	0.265	28.5	17.60
E886241		0.12	31.1	0.34	0.124	0.157	0.34	2.42	721	477	0.10	0.117	19.95	0.581	6.19	1.490
E886242		0.16	30.0	0.27	0.106	0.236	0.54	3.53	598	463	0.14	0.183	19.15	0.923	12.80	3.69
E886243		0.14	31.3	0.37	0.0560	0.096	0.31	2.63	580	647	0.10	0.104	20.0	0.519	5.76	1.545
E886244		0.14	29.5	0.35	0.0235	0.086	0.18	1.75	510	574	0.05	0.049	16.30	0.381	2.63	0.960
E886245		0.16	30.3	0.34	0.114	0.190	0.20	2.55	600	363	0.06	0.070	18.35	0.414	3.33	2.70
E886246		0.12	27.1	0.33	0.110	0.160	0.16	3.68	532	456	0.05	0.053	15.60	0.422	2.82	2.25
E886247		0.10	29.1	0.38	0.0383	0.101	0.12	1.96	513	698	0.03	0.034	20.9	0.452	2.24	0.980
E886248		0.10	27.4	0.38	0.0333	0.091	0.15	2.49	540	592	0.06	0.057	15.90	0.456	2.97	1.440
E886249		0.14	30.2	0.40	0.0540	0.114	0.24	3.08	538	710	0.06	0.069	19.80	0.577	3.68	1.290
E886250		0.02			0.0051	0.036	3.02	4.58	373	109.5	0.50	0.101	18.70	0.260	29.6	17.05
E886251		0.16	31.0	0.34	0.0211	0.093	0.19	2.59	603	473	0.06	0.278	16.70	0.445	3.26	1.400
E886252		0.14	28.3	0.31	0.0878	0.256	0.28	4.60	632	512	0.08	0.134	21.3	0.802	5.45	1.605
E886253		0.16	29.8	0.32	0.0235	0.199	0.26	3.05	557	582	0.08	0.087	19.60	0.814	4.02	4.16
E886254		0.12	30.1	0.36	0.0416	0.171	0.31	2.75	521	450	0.10	0.085	21.0	0.608	4.26	4.17
E886255		0.12	30.5	0.34	0.0468	0.167	0.31	2.86	517	509	0.09	0.094	19.80	0.683	4.68	2.42
E886256		0.12	39.8	0.42	0.0458	0.243	0.28	2.03	638	514	0.08	0.094	21.5	0.506	4.68	1.475
E886257		0.14	30.0	0.31	0.0528	0.115	0.23	2.14	626	467	0.08	0.083	18.50	0.647	4.35	1.640
E886258		0.12	30.2	0.36	0.0599	0.097	0.21	1.66	603	637	0.07	0.073	22.0	0.589	3.96	1.380
E886259		0.12	30.4	0.34	0.0345	0.234	0.24	2.79	660	424	0.08	0.092	20.0	0.708	4.81	1.405
E886260		0.02			0.0225	0.042	3.08	5.05	361	109.0	0.52	0.113	18.55	0.260	30.9	17.70
E886261		0.14	30.8	0.34	0.0200	0.217	0.17	2.43	570	495	0.04	0.053	20.3	0.501	2.70	2.33
E886262		0.14	30.7	0.29	0.0243	0.131	0.22	3.00	556	423	0.05	0.052	17.30	0.478	2.29	7.39
E886263		0.18	30.5	0.29	0.0906	0.229	0.26	2.37	520	566	0.04	0.064	19.55	0.441	2.87	1.830
E886264		0.16	29.1	0.25	0.0343	0.217	0.20	2.19	563	792	0.04	0.064	19.45	0.564	2.67	2.53
E886265		0.14	39.2	0.48	0.0366	0.157	0.35	2.44	484	760	0.08	0.093	22.7	0.514	5.43	1.625
E886266		0.10	30.2	0.34	0.0496	0.152	0.22	3.99	517	417	0.07	0.081	14.45	0.745	4.30	3.42
E886267		0.16	31.3	0.27	0.0715	0.153	0.24	3.08	572	359	0.05	0.077	16.40	0.520	4.04	1.895
E886268		0.14	30.3	0.27	0.0291	0.104	0.19	1.87	577	567	0.05	0.057	18.10	0.372	2.65	1.300
E886269		0.18	29.8	0.30	0.100	0.193	0.37	4.23	623	590	0.10	0.107	17.65	0.684	6.32	28.2
E886270		0.02			0.0115	0.037	2.89	3.86	357	101.5	0.46	0.100	17.40	0.255	32.5	17.00
E886271		0.16	29.9	0.35	0.0452	0.150	0.22	3.20	502	739	0.06	0.074	19.05	0.575	3.43	3.22
E886272		0.12	30.5	0.37	0.0217	0.119	0.26	2.61	451	584	0.05	0.057	15.15	0.818	2.73	2.68
E886273		0.16	31.0	0.38	0.0197	0.137	0.19	2.18	450	548	0.03	0.054	18.05	0.484	1.975	1.730
E886274		0.16	31.0	0.33	0.0663	0.164	0.45	3.10	548	517	0.10	0.100	15.85	0.653	5.57	3.24
E886275		0.14	38.3	0.40	0.0386	0.126	0.28	2.59	554	489	0.06	0.092	19.45	0.497	4.85	2.75
E886276		0.14	38.8	0.52	0.0234	0.139	0.14	2.78	535	1050	0.05	0.055	20.9	0.364	3.03	0.864
E886277		0.16	30.6	0.28	0.0606	0.140	0.27	2.76	657	703	0.08	0.100	20.4	0.586	6.34	1.505
E886278		0.12	31.2	0.40	0.0607	0.123	0.20	2.68	559	633	0.05	0.087	20.9	0.454	4.76	0.977





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To: **GOLDCORP INC - MUSSELWHITE**  
**MUSSELWHITE MINE**  
**PO BOX 7500**  
**THUNDER BAY ON P7B 6S8**

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 Total # Pages: 6 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 25-OCT-2018  
 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
LOD		0.01	0.005	0.01	1	0.004	0.005	0.002	0.001	0.005	0.01	0.002	0.1	0.001	0.1	0.01
E886239		6.91	14.25	198.5	5300	0.770	0.007	0.005	<0.001	<0.005	>10.0	2.50	3.2	4.58	41400	1.13
E886240		162.0	1.080	80.1	24400	6.85	0.048	0.182	<0.001	0.026	1.30	13.25	12.1	1.980	1125	0.78
E886241		11.85	14.00	278	5700	0.957	0.008	0.008	<0.001	0.011	>10.0	2.86	5.6	4.11	>50000	3.99
E886242		9.27	22.4	224	8000	1.340	0.015	0.005	0.001	0.011	>10.0	6.94	4.5	4.35	39000	1.11
E886243		5.72	9.69	295	5100	0.834	0.012	0.008	<0.001	0.009	>10.0	2.78	2.5	3.76	49700	0.78
E886244		3.51	2.89	259	2400	0.405	0.006	0.007	<0.001	<0.005	>10.0	1.285	1.0	3.72	>50000	0.51
E886245		5.22	2.53	198.0	3300	0.474	0.008	0.005	<0.001	0.006	>10.0	1.590	1.3	3.93	25100	2.26
E886246		5.12	12.00	185.5	2700	0.390	0.007	0.017	0.001	0.005	>10.0	1.330	1.5	4.65	>50000	1.16
E886247		5.65	6.58	146.5	2100	0.330	0.006	0.021	0.001	<0.005	>10.0	1.105	1.4	3.90	32200	1.76
E886248		4.43	2.69	287	2800	0.406	0.009	0.005	0.001	0.006	>10.0	1.485	1.3	3.36	>50000	0.49
E886249		4.74	9.18	337	3400	0.498	0.006	0.008	<0.001	<0.005	>10.0	1.835	1.4	4.02	35400	0.54
E886250		154.5	1.080	80.8	23900	6.98	0.057	0.242	<0.001	0.028	1.34	13.75	12.3	2.00	1155	0.82
E886251		4.98	7.57	370	2900	0.438	0.008	0.006	<0.001	<0.005	>10.0	1.550	1.2	4.07	>50000	0.50
E886252		6.24	3.62	269	4900	0.706	0.006	0.008	0.001	0.006	>10.0	2.75	2.1	3.72	35200	1.30
E886253		4.93	43.5	329	3200	0.505	0.006	0.008	0.001	0.005	>10.0	2.08	1.8	3.52	>50000	0.72
E886254		5.19	25.3	304	3700	0.625	0.011	0.005	<0.001	0.006	>10.0	2.23	1.6	3.88	21500	0.63
E886255		5.71	68.6	276	4400	0.692	0.010	0.006	0.002	0.006	>10.0	2.34	4.9	3.59	42100	0.62
E886256		5.55	4.02	332	4300	0.684	0.011	0.004	<0.001	0.005	>10.0	2.35	1.7	3.74	>50000	0.76
E886257		4.65	3.41	318	4400	0.561	0.008	0.005	<0.001	<0.005	>10.0	2.09	1.6	4.63	46900	0.64
E886258		4.88	2.59	247	3800	0.557	0.010	0.013	<0.001	0.006	>10.0	1.965	1.4	4.07	33400	0.48
E886259		6.59	2.29	317	4400	0.692	0.010	0.005	<0.001	<0.005	>10.0	2.41	1.7	4.32	>50000	0.78
E886260		160.5	1.135	81.6	25100	7.32	0.054	0.261	<0.001	0.031	1.36	14.40	12.4	2.01	1165	0.81
E886261		4.82	5.45	337	3200	0.431	0.006	0.007	0.001	<0.005	>10.0	1.360	1.2	4.42	47400	0.58
E886262		3.60	51.2	327	2500	0.322	0.009	0.013	0.002	<0.005	>10.0	1.100	1.2	4.89	23600	2.35
E886263		4.33	10.35	268	2900	0.444	0.005	0.009	<0.001	0.007	>10.0	1.415	1.3	3.79	42700	2.18
E886264		3.64	15.00	455	2900	0.416	0.005	0.020	<0.001	<0.005	>10.0	1.255	1.0	3.95	>50000	0.66
E886265		6.18	11.50	155.5	4800	0.806	0.007	0.019	<0.001	0.007	9.56	2.73	1.9	3.39	43300	0.81
E886266		4.24	5.35	313	3800	0.531	0.008	0.006	<0.001	0.007	>10.0	1.975	1.7	3.44	>50000	1.04
E886267		5.32	6.72	273	4300	0.570	0.006	0.008	<0.001	0.005	>10.0	1.795	1.4	3.61	>50000	0.73
E886268		4.42	17.50	316	2800	0.397	<0.005	0.017	<0.001	<0.005	>10.0	1.295	1.5	4.85	>50000	0.62
E886269		5.98	70.6	347	5500	0.823	0.011	0.004	<0.001	0.007	>10.0	3.00	7.2	4.74	49200	0.92
E886270		153.0	1.150	77.7	23500	6.47	0.054	0.278	<0.001	0.028	1.26	13.65	11.9	1.900	1095	0.83
E886271		4.44	29.8	314	3400	0.470	0.008	0.009	<0.001	0.005	>10.0	1.665	1.4	4.76	33900	0.64
E886272		4.24	40.6	261	3500	0.455	0.005	0.011	<0.001	<0.005	>10.0	1.385	1.4	3.97	>50000	2.05
E886273		3.30	24.0	254	2600	0.278	0.005	0.008	0.001	<0.005	>10.0	0.973	1.4	5.46	45300	1.28
E886274		6.46	7.38	341	6000	0.776	0.012	0.007	<0.001	0.007	>10.0	2.67	2.1	3.73	>50000	0.89
E886275		4.75	7.94	275	4400	0.643	0.009	0.015	<0.001	0.005	>10.0	2.39	1.7	3.80	>50000	1.32
E886276		3.40	3.22	216	3200	0.428	<0.005	0.018	0.002	<0.005	>10.0	1.540	1.5	3.60	>50000	0.43
E886277		12.15	2.22	111.0	5400	0.749	0.010	0.013	0.002	0.007	>10.0	3.05	10.4	4.07	31300	1.95
E886278		4.26	1.005	116.5	3800	0.581	0.010	0.021	<0.001	<0.005	>10.0	2.34	2.0	3.03	>50000	0.70



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To: **GOLDCORP INC - MUSSELWHITE**  
**MUSSELWHITE MINE**  
**PO BOX 7500**  
**THUNDER BAY ON P7B 6S8**

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 Total # Pages: 6 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 25-OCT-2018  
 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	
		Na %	Nb ppm	Ni ppm	P %	Pb ppm	Pd ppm	Pt ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm
		0.001	0.002	0.04	0.001	0.01	0.001	0.002	0.01	0.001	0.01	0.01	0.005	0.01	0.02	
E886239		0.047	0.163	8.61	3.74	21.1	0.003	<0.002	560	<0.001	1.10	1.04	1.22	0.346	0.39	448
E886240		0.559	0.048	140.5	0.265	7.88	0.004	0.003	20.5	0.001	0.47	0.17	12.75	0.428	0.77	1120
E886241		0.054	0.191	11.95	3.93	22.2	<0.001	<0.002	550	0.001	1.44	1.14	1.26	0.511	0.45	435
E886242		0.058	0.231	50.8	3.89	35.5	0.001	<0.002	900	0.001	1.34	1.11	1.65	0.794	0.65	573
E886243		0.046	0.160	14.20	3.10	21.7	0.002	<0.002	440	<0.001	1.10	0.82	1.23	0.421	0.44	294
E886244		0.036	0.106	16.60	4.62	10.45	<0.001	<0.002	510	0.001	1.17	0.63	0.70	0.291	0.26	254
E886245		0.038	0.126	11.60	4.47	14.80	<0.001	<0.002	460	0.001	1.45	1.08	0.83	0.355	0.27	484
E886246		0.080	0.091	8.71	4.72	9.90	0.004	<0.002	520	0.001	1.26	1.38	0.75	0.315	0.23	620
E886247		0.037	0.091	4.11	3.08	8.75	<0.001	<0.002	403	<0.001	1.00	0.82	0.79	0.179	0.23	893
E886248		0.072	0.093	9.17	>5.0	14.00	0.002	<0.002	480	0.001	1.25	1.40	0.77	0.282	0.25	375
E886249		0.074	0.123	15.30	4.19	16.70	0.001	<0.002	430	0.001	1.14	2.25	0.90	0.377	0.28	249
E886250		0.574	0.048	137.0	0.275	7.85	0.007	0.004	20.0	<0.001	0.48	0.15	12.95	0.489	0.74	1160
E886251		0.062	0.102	10.70	4.15	15.20	<0.001	<0.002	530	<0.001	1.22	1.60	0.78	0.319	0.31	323
E886252		0.086	0.155	12.85	3.50	24.9	0.002	0.002	362	<0.001	1.32	1.43	1.35	0.562	0.41	382
E886253		0.058	0.113	58.2	4.48	18.30	0.002	<0.002	930	<0.001	1.19	0.91	1.02	0.540	0.28	655
E886254		0.061	0.141	89.2	4.11	17.85	0.003	<0.002	920	<0.001	1.16	0.81	1.05	0.794	0.30	1090
E886255		0.054	0.164	108.5	4.24	20.8	<0.001	0.002	840	<0.001	1.13	0.63	1.23	0.723	0.39	843
E886256		0.077	0.134	16.95	3.69	17.40	0.002	<0.002	440	0.001	1.14	0.69	1.25	0.463	0.34	472
E886257		0.056	0.121	12.80	4.32	20.3	0.002	<0.002	392	<0.001	1.44	0.57	1.07	0.450	0.31	319
E886258		0.050	0.132	8.84	3.12	15.80	0.001	<0.002	328	0.001	1.15	0.47	1.04	0.339	0.31	316
E886259		0.050	0.143	10.30	3.09	18.05	<0.001	<0.002	335	<0.001	1.38	0.80	1.22	0.490	0.43	391
E886260		0.575	0.057	143.0	0.271	8.57	<0.001	0.003	20.1	0.001	0.49	0.16	13.10	0.523	0.85	1140
E886261		0.047	0.110	79.4	4.16	13.80	0.001	<0.002	720	<0.001	1.30	0.84	0.85	0.365	0.27	494
E886262		0.050	0.099	361	>5.0	11.45	0.002	<0.002	1160	<0.001	1.43	0.97	0.80	0.347	0.22	511
E886263		0.045	0.105	26.6	4.64	11.95	<0.001	0.002	860	<0.001	1.04	0.88	0.77	0.314	0.24	323
E886264		0.051	0.095	48.6	4.19	14.25	<0.001	<0.002	690	<0.001	0.93	1.19	0.70	0.344	0.26	320
E886265		0.059	0.129	32.2	2.92	16.75	<0.001	0.002	630	<0.001	1.03	1.27	1.18	0.403	0.42	412
E886266		0.100	0.113	57.4	>5.0	22.6	<0.001	0.002	620	0.001	1.46	2.68	0.82	0.361	0.30	386
E886267		0.078	0.128	15.65	4.99	18.80	<0.001	0.003	560	<0.001	1.65	1.92	0.83	0.306	0.32	279
E886268		0.041	0.095	15.25	4.35	12.35	<0.001	<0.002	590	<0.001	1.11	0.99	0.68	0.247	0.22	335
E886269		0.083	0.163	191.0	4.41	24.2	0.001	0.002	740	<0.001	1.09	1.53	1.27	0.498	0.45	338
E886270		0.544	0.048	132.5	0.255	8.03	<0.001	0.005	20.3	<0.001	0.45	0.17	11.35	0.409	0.81	1070
E886271		0.057	0.109	83.8	>5.0	19.95	<0.001	<0.002	710	<0.001	0.94	1.13	0.80	0.362	0.30	358
E886272		0.044	0.099	65.5	>5.0	14.10	<0.001	0.003	1320	<0.001	1.14	1.15	0.74	0.485	0.28	583
E886273		0.040	0.074	67.8	>5.0	13.45	<0.001	<0.002	1010	<0.001	0.97	0.86	0.56	0.473	0.18	506
E886274		0.053	0.174	65.6	>5.0	27.0	0.001	<0.002	1070	<0.001	1.32	1.09	1.10	0.654	0.32	380
E886275		0.040	0.129	58.4	3.05	17.60	<0.001	<0.002	570	<0.001	1.12	0.73	0.92	0.396	0.34	417
E886276		0.040	0.098	5.02	3.41	13.00	<0.001	0.002	261	<0.001	0.96	1.03	0.76	0.231	0.21	344
E886277		0.064	0.148	7.00	3.11	25.6	<0.001	0.002	176.0	<0.001	1.10	2.00	1.14	0.376	0.41	384
E886278		0.044	0.119	4.26	3.08	20.3	0.001	<0.002	171.0	<0.001	1.19	1.40	0.95	0.457	0.33	238



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 www.alsglobal.com/geochemistry

To: **GOLDCORP INC - MUSSELWHITE  
 MUSSELWHITE MINE  
 PO BOX 7500  
 THUNDER BAY ON P7B 6S8**

Page: 5 - D  
 Total # Pages: 6 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 25-OCT-2018  
 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	
		Ta ppm 0.001	Te ppm 0.02	Th ppm 0.002	Ti % 0.001	Tl ppm 0.002	U ppm 0.005	V ppm 0.05	W ppm 0.01	Y ppm 0.003	Zn ppm 0.1	Zr ppm 0.02
E886239		<0.001	0.04	0.369	0.008	0.734	0.129	7.51	0.32	1.770	1840	0.18
E886240		<0.001	0.02	3.80	0.024	0.145	0.616	58.1	0.06	11.05	200	6.00
E886241		<0.001	<0.02	0.410	0.009	0.414	0.150	8.48	0.40	2.04	2330	0.29
E886242		<0.001	<0.02	0.601	0.012	0.447	0.297	12.35	0.40	2.95	1355	0.15
E886243		<0.001	<0.02	0.450	0.008	0.187	0.144	7.76	0.34	1.935	1305	0.38
E886244		<0.001	<0.02	0.228	0.004	0.100	0.086	3.65	0.25	0.915	1020	0.24
E886245		<0.001	<0.02	0.245	0.005	0.103	0.095	4.77	0.31	1.165	914	0.20
E886246		<0.001	0.02	0.232	0.004	0.484	0.089	3.79	0.30	0.938	1045	0.20
E886247		<0.001	<0.02	0.204	0.003	0.167	0.072	3.22	0.26	0.695	1355	0.80
E886248		<0.001	<0.02	0.225	0.004	0.177	0.087	4.17	0.36	0.986	1265	0.25
E886249		<0.001	<0.02	0.279	0.005	0.156	0.098	4.75	0.31	1.230	1240	0.39
E886250		0.005	<0.02	3.86	0.024	0.153	0.646	55.8	0.07	11.20	200	8.18
E886251		<0.001	<0.02	0.256	0.005	0.237	0.095	4.25	0.29	1.150	1090	0.24
E886252		<0.001	<0.02	0.428	0.008	0.027	0.145	7.32	0.45	1.750	1675	0.21
E886253		<0.001	0.02	0.297	0.005	0.133	0.114	4.90	0.33	1.300	1275	0.33
E886254		<0.001	<0.02	0.292	0.006	0.028	0.108	5.55	0.30	1.335	1180	0.17
E886255		<0.001	<0.02	0.373	0.008	0.053	0.130	6.87	0.59	1.515	1285	0.18
E886256		<0.001	<0.02	0.372	0.007	0.078	0.127	6.78	0.32	1.425	1535	0.16
E886257		<0.001	<0.02	0.313	0.006	0.028	0.119	5.79	0.34	1.480	1485	0.25
E886258		<0.001	0.05	0.297	0.006	0.017	0.108	5.56	0.29	1.350	1245	0.40
E886259		<0.001	<0.02	0.354	0.008	0.027	0.122	6.53	1.11	1.470	1505	0.18
E886260		0.005	<0.02	4.14	0.024	0.154	0.664	57.9	0.10	11.30	203	8.81
E886261		<0.001	0.05	0.221	0.005	0.013	0.088	4.29	0.88	0.874	1010	0.42
E886262		<0.001	<0.02	0.158	0.004	0.024	0.068	3.50	1.18	0.743	1050	0.33
E886263		<0.001	0.02	0.230	0.005	0.046	0.102	4.44	0.57	0.870	1135	0.33
E886264		<0.001	<0.02	0.219	0.005	0.061	0.071	4.04	0.44	0.866	1275	0.61
E886265		<0.001	0.05	0.426	0.009	0.268	0.128	7.88	0.47	1.725	1085	0.57
E886266		<0.001	<0.02	0.264	0.006	0.097	0.128	6.26	0.40	1.470	1060	0.79
E886267		<0.001	<0.02	0.278	0.007	0.062	0.107	5.88	0.58	1.335	1175	0.22
E886268		<0.001	<0.02	0.199	0.004	0.030	0.077	3.87	0.41	0.835	1105	0.50
E886269		<0.001	<0.02	0.419	0.009	0.164	0.143	8.97	0.45	1.955	1135	0.23
E886270		<0.001	0.02	3.88	0.023	0.146	0.605	52.9	0.07	10.35	189.0	9.36
E886271		<0.001	<0.02	0.247	0.005	0.141	0.096	5.19	0.40	1.090	1160	0.33
E886272		<0.001	<0.02	0.225	0.005	0.423	0.085	4.56	0.32	0.706	966	0.43
E886273		<0.001	0.02	0.159	0.003	0.071	0.062	2.93	0.25	0.634	1155	0.31
E886274		<0.001	0.05	0.324	0.009	0.207	0.143	7.99	0.37	1.660	1475	0.23
E886275		<0.001	<0.02	0.343	0.007	0.523	0.111	5.76	0.29	1.470	1110	0.42
E886276		<0.001	<0.02	0.249	0.005	0.058	0.076	3.89	0.97	0.958	1640	0.71
E886277		<0.001	<0.02	0.448	0.009	0.043	0.147	7.87	0.37	1.925	1570	0.50
E886278		<0.001	<0.02	0.362	0.006	0.064	0.110	5.72	0.24	1.415	1415	0.66



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 THUNDER BAY ON P7B 6S8

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 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg	VEG-ASH01 WT. SAMP g	VEG-ASH01 WT. ASH g	ME-VEG41 a Au ppm	ME-VEG41 a Ag ppm	ME-VEG41 a Al %	ME-VEG41 a As ppm	ME-VEG41 a B ppm	ME-VEG41 a Ba ppm	ME-VEG41 a Be ppm	ME-VEG41 a Bi ppm	ME-VEG41 a Ca %	ME-VEG41 a Cd ppm	ME-VEG41 a Ce ppm	ME-VEG41 a Co ppm
		0.02	0.01	0.01	0.0002	0.001	0.01	0.01	1	0.1	0.01	0.001	0.01	0.001	0.003	0.002
E886279		0.10	30.8	0.34	0.0344	0.108	0.23	2.48	555	715	0.08	0.085	19.60	0.595	5.43	1.370
E886280		0.02			0.0043	0.038	2.88	4.04	338	100.5	0.45	0.108	17.10	0.262	29.5	15.70
E886281		0.12	39.0	0.49	0.0127	0.091	0.15	1.95	569	806	0.04	0.073	21.4	0.457	3.35	1.035
E886282		0.14	38.7	0.49	0.0247	0.089	0.17	2.37	488	930	0.04	0.060	22.3	0.488	4.02	1.165
E886283		0.14	38.8	0.41	0.0196	0.105	0.19	2.07	559	594	0.05	0.068	21.7	0.441	4.19	1.075
E886284		0.12	39.0	0.66	0.0191	0.094	0.12	2.24	451	781	0.04	0.050	23.1	0.349	2.53	0.818



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 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	
		Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
		0.01	0.005	0.01	1	0.004	0.005	0.002	0.001	0.005	0.01	0.002	0.1	0.001	0.1	0.01
E886279		5.98	1.305	116.0	4700	0.661	0.010	0.022	0.001	0.005	>10.0	2.56	3.2	3.52	34500	0.72
E886280		146.5	1.080	74.6	23500	6.09	0.061	0.280	<0.001	0.030	1.27	13.15	11.5	1.870	1080	0.96
E886281		4.00	1.075	65.2	3300	0.417	0.009	0.028	<0.001	<0.005	>10.0	1.625	2.6	4.17	22500	0.94
E886282		4.59	1.560	62.7	4200	0.509	0.006	0.031	<0.001	0.005	>10.0	1.945	2.3	3.83	20300	1.08
E886283		4.67	1.485	100.0	4000	0.518	0.007	0.009	0.001	<0.005	>10.0	2.01	2.4	3.85	39100	0.90
E886284		4.30	0.717	63.0	2700	0.324	<0.005	0.021	<0.001	<0.005	>10.0	1.250	1.9	3.32	25200	0.77



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 Account: OPB

Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	ME-VEG41 a	
		Na %	Nb ppm	Ni ppm	P %	Pb ppm	Pd ppm	Pt ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm
E886279		0.044	0.125	6.81	3.10	26.0	<0.001	0.002	243	<0.001	1.09	1.28	1.05	0.412	0.33	475
E886280		0.538	0.060	129.5	0.251	7.68	<0.001	0.003	19.45	<0.001	0.45	0.21	11.20	0.411	0.75	1060
E886281		0.039	0.094	3.92	3.03	17.30	<0.001	0.002	199.0	<0.001	0.97	0.94	0.75	0.294	0.22	707
E886282		0.037	0.106	4.84	3.00	23.2	0.001	<0.002	198.5	<0.001	0.92	0.67	0.81	0.287	0.28	673
E886283		0.039	0.095	4.66	2.85	19.50	<0.001	0.002	219	<0.001	1.00	0.64	0.85	0.304	0.29	446
E886284		0.035	0.071	3.29	2.37	11.90	<0.001	0.003	177.0	<0.001	0.84	0.58	0.70	0.182	0.17	676





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**CERTIFICATE OF ANALYSIS VA18218834**

Sample Description	Method Analyte Units LOD	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a	ME-VEG41a
		Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
		0.001	0.02	0.002	0.001	0.002	0.005	0.05	0.01	0.003	0.1	0.02
E886279		<0.001	<0.02	0.391	0.008	0.098	0.126	6.62	0.28	1.645	1345	0.72
E886280		<0.001	0.05	3.76	0.023	0.131	0.589	51.6	0.12	9.95	186.5	8.80
E886281		<0.001	0.02	0.242	0.005	0.038	0.083	4.53	0.23	1.025	1255	0.88
E886282		<0.001	<0.02	0.308	0.006	0.070	0.096	5.46	0.28	1.180	1125	0.91
E886283		<0.001	<0.02	0.298	0.006	0.114	0.097	5.44	0.28	1.290	1305	0.23
E886284		<0.001	0.04	0.202	0.004	0.041	0.068	3.71	0.27	0.788	1175	0.73



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Project: Vegetation Sampling

**CERTIFICATE OF ANALYSIS VA18218834**

**CERTIFICATE COMMENTS**

**LABORATORY ADDRESSES**

Applies to Method:

Processed at ALS Vancouver located at 21 03 Dollarton Hwy, North Vancouver, BC, Canada.

BAG-01  
ME-VEG41a

DRY-VEG  
VEG-ASH01

LOG-22  
WEI-21

LOG-24



# Appendix VI – Invoices and Receipts

ALS Canada Ltd.  
Colin Dunn Consulting  
Ojjakos Community development Corporation  
Wisk Air Helicopters

**(Withheld for client confidentiality).**

# 2018 Karl Zeemel Mine Grid Expansion

# Appendix VII – Invoices and Receipts

Total Precision Surveying  
Wisk Air Helicopters

**(Withheld for client confidentiality).**

# 2018 Exploration Trail Construction

# Appendix VIII – Invoices and Receipts

LTL Contracting Ltd.  
Armtec  
Wisk Air Helicopters

**(Withheld for client confidentiality).**

# Appendix IX – Permits

Work Permit  
Memorandum of Understanding

**(Withheld for client confidentiality).**

# 2018 Karl Zeemal Diamond Drilling

2018 Karl Zeemal Diamond Drilling Program

HOLE ID	Planned Dip (degrees)	Length (m)	Core Diameter	UTM East (Converted)	UTM North (Converted)
18-KAZ-001	-62	139	NQ	685367.47	5828284.62
18-KAZ-002	-54	134	NQ	685367.47	5828284.62
18-KAZ-012	-62	41	NQ	685493.62	5828209.67
18-KAZ-013	-62	38	NQ	685492.44	5828192.51
18-KAZ-025	-52	209	NQ	685660.95	5828139.89
18-KAZ-028	-55	50	NQ	685683.84	5828128.07
18-KAZ-034	-64	51	NQ	685724.16	5828096.30
18-KAZ-035	-48	47	NQ	685723.78	5828095.21
18-KAZ-036	-48	31	NQ	685721.30	5828088.54
18-KAZ-040	-63	39	NQ	685771.54	5828080.48
18-KAZ-041	-63	46	NQ	685765.83	5828067.65
18-KAZ-042	-49	42	NQ	685765.83	5828067.65
18-KAZ-047	-70	34	NQ	685808.75	5828042.27
18-KAZ-048	-50	29	NQ	685808.75	5828042.27
18-KAZ-050	-52	45	NQ	685839.69	5828025.44
18-KAZ-051	-68	36	NQ	685828.29	5828011.32
18-KAZ-052	-76	35	NQ	685875.89	5827990.83
18-KAZ-053	-45	23	NQ	685875.89	5827990.83
18-KAZ-054	-47	200	NQ	685900.67	5827986.55
18-KAZ-055	-64	210	NQ	685900.67	5827986.55
18-KAZ-056	-45	183	NQ	685895.48	5827972.44
18-KAZ-058	-49	53	NQ	685925.72	5827985.06
18-KAZ-059	-46	251	NQ	685920.43	5827975.17
18-KAZ-060	-65	62	NQ	685943.06	5827957.83
18-KAZ-061	-45	53	NQ	685942.80	5827956.98
18-KAZ-063	-50	59	NQ	685975.07	5827961.28
18-KAZ-064	-50	32	NQ	685963.86	5827939.12
18-KAZ-066	-49	113	NQ	686005.02	5827913.03
18-KAZ-090	-64	52	NQ	685724.24	5828096.53
18-KAZ-091	-48	32	NQ	685721.37	5828088.61
18-KAZ-092	-50	50	NQ	685970.26	5827951.17
18-KAZ-093	-54	11	NQ	685356.01	5828255.52
<b>Total (m)</b>		<b>2430</b>			

Claim ID	# Drill Holes	Meterage Drilled (m)
193087	6	369
259427	5	363
314497	10	599
327249	11	1099



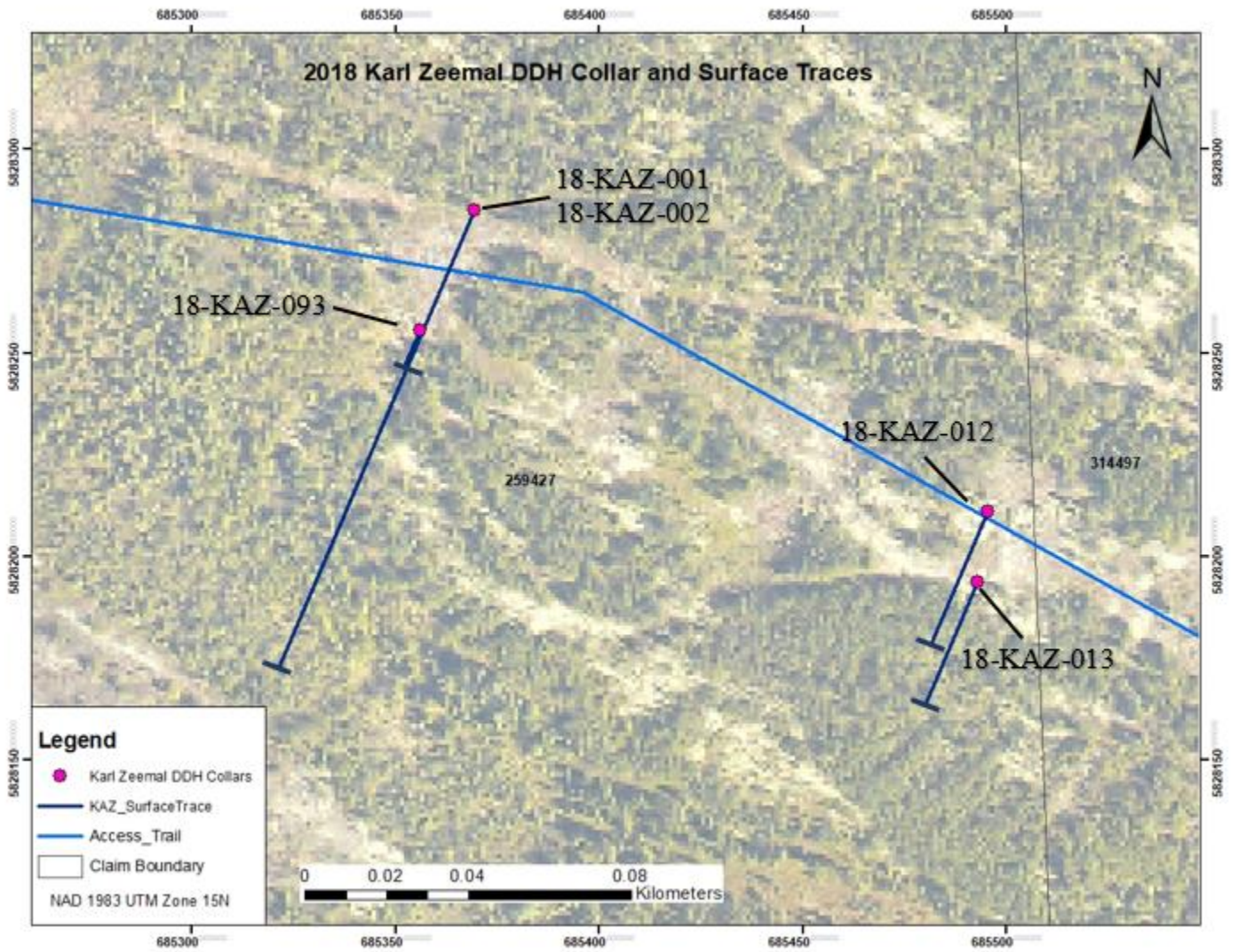


Figure 1. Map of 2018 Karl Zeemal diamond drill hole collars and surface traces. 1 of 3.

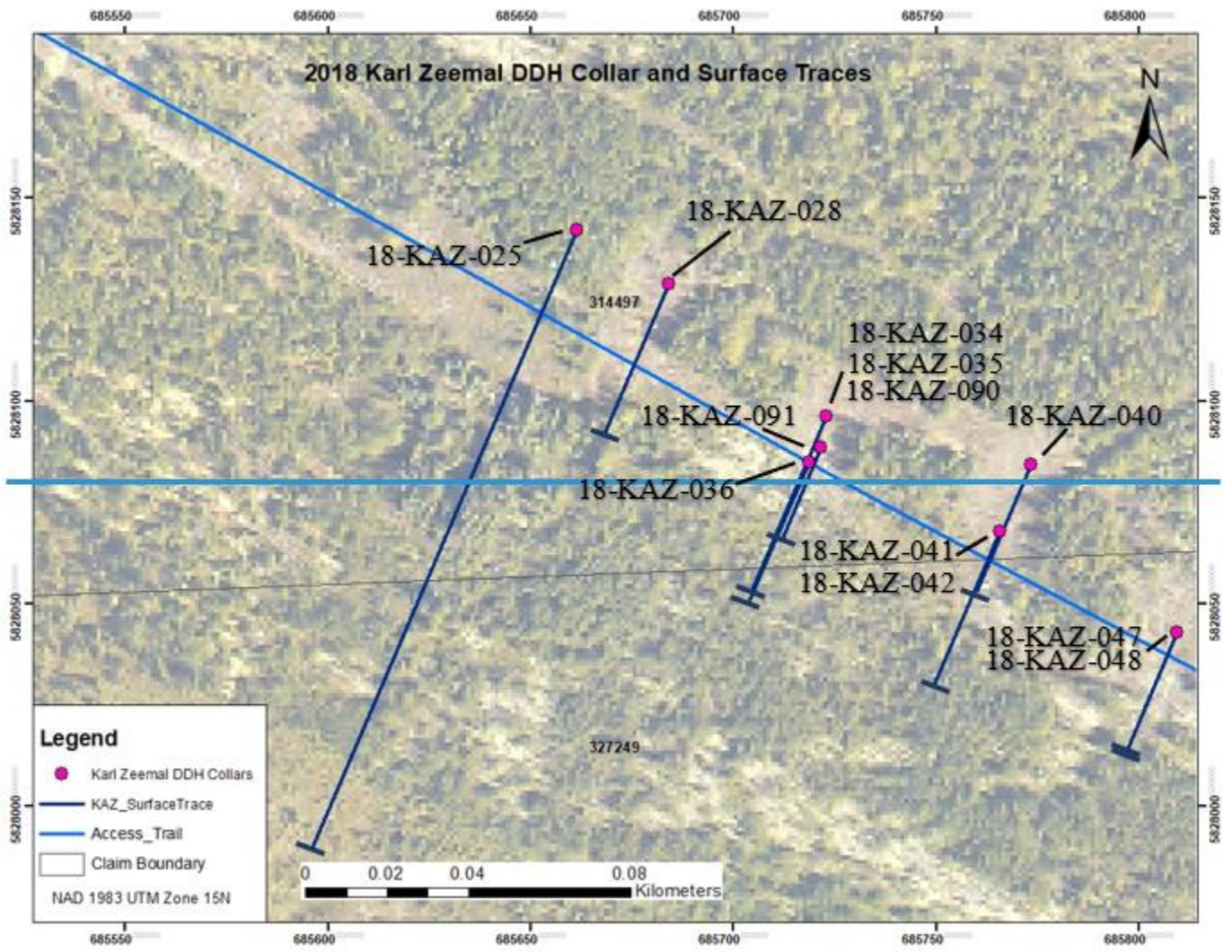


Figure 2. Map of 2018 Karl Zeemal diamond drill hole collars and surface traces. 2 of 3.



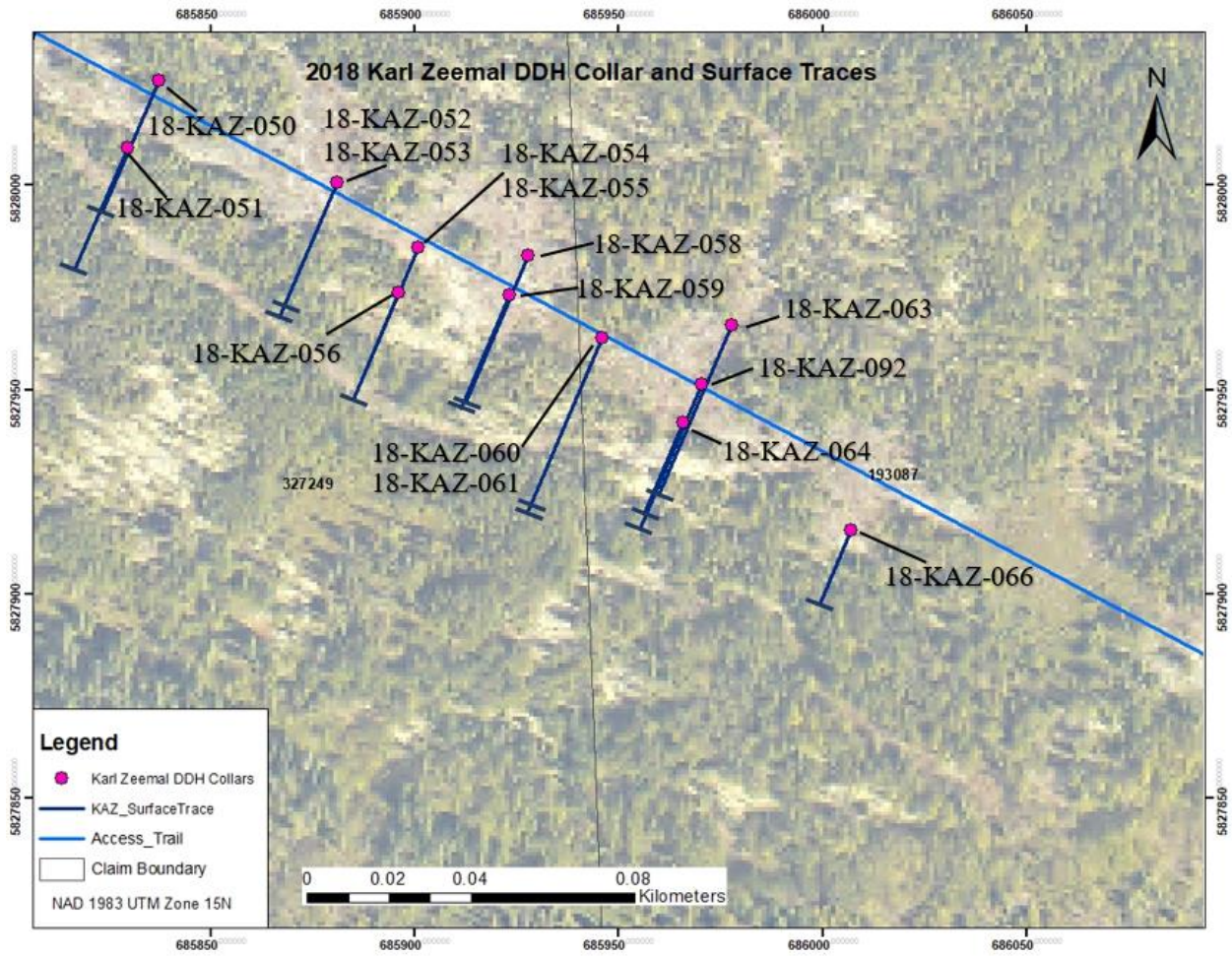


Figure 3. Map of 2018 Karl Zeemal diamond drill hole collars and surface traces. 3 of 3.

# Appendix X – Exploration Permit

**Ministry of Northern Development  
and Mines**  
Mineral Development and Lands Branch

B002 – 435 James Street South  
Thunder Bay, Ontario P7E 6S7  
Tel.: (807) 475-1123  
Fax: (807) 475-1112

**Ministère du Développement du Nord et  
des Mines**  
Direction de l'exploitation des minéraux et de  
la gestion des terrains miniers

Bureau B002 – 435 James Sud  
Thunder Bay, Ontario P7E 6S7  
Tél.: (807) 475-1123  
Télééc.: (807) 475-1112



November 8, 2017

Katie Lucas, Goldcorp Canada Ltd.  
3201-130 Adelaide Street West  
Toronto, ON M5H 3P5

Via email: [katie.lucas@goldcorp.com](mailto:katie.lucas@goldcorp.com)

Dear Ms. Lucas:

**Re: Exploration Permit Application, PR-17-11171, Karl Zeemel Project,  
Karl Lake and Zeemel Lake areas, District of Kenora**

Attached is your exploration permit, **PR-17-11171**, issued pursuant to subsection 78.3(2) of the Mining Act, R.S.O. 1990, Chapter M.14. This permit is subject to the requirements of the Mining Act, Ontario Regulation 308/12, the applicable Provincial Standards for Early Exploration and any additional Terms and Conditions in the permit that are specific to your project.

Please note that the attached exploration permit is effective for a period of 3 years. You can apply to renew your permit, which should be done well in advance of the expiry date so there will be adequate time for processing and to avoid any stoppage in exploration activities.

If there are changes to any names or addresses on the permit, please advise the Ministry of Northern Development and Mines staff member noted below and the information amendment will be made to your exploration permit. If you would like to make changes to the exploration activities, such as the type of activity, location of activity or scale of the work, please follow the amendment process and contact MNDM for further direction.

If you have any questions or need any assistance, please do not hesitate to contact Mark O'Brien, Mineral Exploration and Development Consultant in the Thunder Bay office, at 807-475-1106 or by e-mail to [mark.o'brien@ontario.ca](mailto:mark.o'brien@ontario.ca).

Sincerely,



Scott Burgess  
Director of Exploration

*Enclosure: Exploration Permit*

ec: Chief Dinah Kanate, Weagamow First Nation, [dinhtkanate@northcaribou.ca](mailto:dinhtkanate@northcaribou.ca)  
Bruce Adams, Weagamow First Nation, [bruceadams45@gmail.com](mailto:bruceadams45@gmail.com)  
Council, Weagamow First Nation, [council@northcaribou.ca](mailto:council@northcaribou.ca)  
Chief Masakeyash, Mishkeegogamang First Nation,  
[davidmasakeyash@msn.com](mailto:davidmasakeyash@msn.com)  
Connie Gray-McKay, Mishkeegogamang First Nation, [conniegraymckay@knet.ca](mailto:conniegraymckay@knet.ca)  
Chief Roderick Winnepetonga, Wunnumin Lake First Nation,  
[rodw@wunnumin.ca](mailto:rodw@wunnumin.ca)  
Chief Ernest Wesley, Cat Lake First Nation [erniew@catlake.ca](mailto:erniew@catlake.ca)  
John Kamenawatamin, Windigo Tribal Council, [jkamenawatamin@windigo.on.ca](mailto:jkamenawatamin@windigo.on.ca)  
Chief Eddie Mamakwa, Kingfisher Lake First Nation, [eddiem@kingfisherlake.ca](mailto:eddiem@kingfisherlake.ca)

**Exploration Permit/Permis  
d'exploration  
Number/Numero : PR-17-11171**

This permit is issued under the authority of section 78.3 of the *Mining Act* and the Exploration Plans and Exploration Permits Regulation (O. Reg. 308/12). It is subject to the provisions of the Act and regulation as well as the terms and conditions included in this permit.

Ce permis est émis conformément aux dispositions de section 78.3 de la *Loi sur les mines* et des règlements et est sujet aux restrictions et dispositions de ce lois et règlements ainsi qu'aux conditions ci-énoncées

Note: The issuance of this permit does not relieve the applicant from the responsibility of acquiring any other agency, board, government, etc. approval as may be required nor does it relieve the permittee from the requirements of any other legislation or guarantee access to the land.

Remarque: La délivrance d'un permis n'exonère pas le demandeur de l'obligation d'obtenir l'autorisation de tout autre organisme, commission, gouvernement, etc. qui pourrait être exigée, non plus qu'elle exempte le détenteur des dispositions des lois et elle ne garantit pas l'accès à la terre.

**Project Details/ Détails sur le projet**

Project Name/ Titre du projet  
**Karl Zeemel Project**

Qualified Supervisor/Superviseur qualifié  
**Katie Lucas**

**This Permit is issued to: Ce Permis est délivré a:**

Name of Permittee/Nom du détenteur:  
**Goldcorp Canada Ltd.**

Mailing Address/Adresse postale:  
**3201-130 Adelaide Street West, Toronto, ON M5H 3P5**

To conduct early exploration activities from/ Pour effectuer des activités d'exploration du: **2017/11/07** to: **2020/11/06**

On claim/lease/licence of occupation number(s)/Sur le numéro(s) du claim/bail/permis d'occupation: **1199740 1199737 1199738 1199739 1199736 4208959 4208960 4208961 4208962 1234260 1234261 1234262 1234263 1234264**

as per your exploration permit renewal application date/conformément a la demande de permis d'exploration en date du: **2017/09/18**

- Mechanized Drilling (assembled weight >150kg)/ Forage mécanisé (poids assemblé >150 kg)
- Mechanized Stripping (>100m<sup>2</sup> in 200m radius )/ Décapage mécanisé (> 100 m<sup>2</sup> dans un rayon de 200 m)
- Pitting and Trenching (>3m<sup>3</sup> in 200m radius)/ Creusement de fosses et de tranchées (>3 m<sup>3</sup> dans un rayon de 200 m)
- Line Cutting (>1.5m width)/ Découpage des quadrillages (<1,5 m de largeur)
- Other (Early exploration activities for which Director has required a permit)/Autre (Activités d'exploration préliminaires pour laquelle le Directeur a demandé un permis):

Subject to the following conditions:/Et sous les conditions suivantes:

1. The Permittee shall keep this permit or a true copy thereof on the permit area./Le détenteur conserver ace permis ou une copie conforme sur les lieux des travaux.
2. The person in charge of the operation conducted under this permit shall produce and show this permit or the true copy kept on the exploration permit area to any inspector whenever requested by the officer./Le responsable des travaux couverts par ce permis doit produire le permis ou sa copie conforme si un inspecteur lui demande.
3. The requirements outlined in Schedule 1 of Ontario Regulation 308/12 and applicable Provincial Standards for Early Exploration/ Les exigences générales identifier à l'annexe 1 du Règlement de l'Ontario 308/12 et les normes provinciale relatives a l'exploration préliminaire.
4. Other terms and conditions as listed on this permit./Autres termes et conditions énoncées sur ce permis.

Place of Issue/Émis a:  
**Thunder Bay**

Issued by/Émis par:  
**Scott Burgess, Director of Exploration**

Date of Issue/Date émis (yyyy/mm/dd, aaaa/mm/jj):

2017/11/07

Signature of Director/Signature du directeur:



Additional Terms and Conditions:

none

Autre termes et conditions:



# Appendix XI – 2018 Karl Zeemel DDH Logs

Litho Code Index  
DDH logs sorted by Hole ID

## Diamond Drill Hole Major Lithology Code Legend

1	Unsubdivided Ultramafic Intrusive Unit
2	Unsubdivided Mafic Metavolcanic Flow
6	Unsubdivided Clastic Metasedimentary Unit
2U	Garnetiferous Mafic Metavolcanic Unit
4A	Gruneritized and Silicified Chert-Magnetite Banded Iron Formation
4B	Chert-Magnetite Banded Iron Formation
4C	Chert
4H	Pyrrhotite Cemented Breccia
6N	Sulphidic Meta-Argillite/Mudstone
8B	Granite
QTZ VN	Massive Quartz Vein
CARB Vein	Massive Carbonate Vein

# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-001**

Project: **KAZ**

Mine Grid Easting: 10975.3956

Planned Depth(m): 138

Drill Start Date: 9/8/2018

Mine Grid Northing: 1840.8983

Actual Depth (m): 139

Drill End Date: 9/10/2018

Elevation: 5317.3784

Core Diameter: NQ

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: changed from original do to rotation of 2005 collars  
To be drilled by Boart Longyear at an Azimuth of 203.8 (True North) and a Dip of -62 degrees.

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.471	-61.079	SURV
14	247.04	-60.8	GYRO SHOT
29	247.6	-60.4	GYRO SHOT
44	249.58	-60.17	GYRO SHOT
59	249.58	-59.74	GYRO SHOT
75	249.63	-59.36	GYRO SHOT
89	249.21	-59.21	GYRO SHOT
104	250.29	-59.15	GYRO SHOT
119	250.67	-58.44	GYRO SHOT
138	250.95	-57.98	GYRO SHOT



18-KAZ-001

Depth	Assay				MAJOR UNIT						MINOR UNIT		ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E964391	39.5	40.4	0.012																		
	E964392	40.4	41.3	0.01																		
	E964393	41.3	42.2	0.022																		
	E964394	42.2	43.1	0.045																		
	E964395	43.1	44.1	0.009																		
45	E964396	44.1	45.1	0.012																		
	E964397	45.1	46.1	0.006																		
	E964398	46.1	47.1	0.006																		
	E964399	47.1	48.1	0.046																		
	E964401	48.1	49.1	0.01																		
	E964402	49.1	50.1	0.009																		
50	E964403	50.1	51	0.008																		
	E964404	51	51.8	0.01																		
	E964405	51.8	52.7	0.011																		
	E964406	52.7	53.6	0.013																		
	E964407	53.6	54.5	0.01																		
55	E964408	54.5	55.4	0.007																		
	E964409	55.4	56.3	0.007																		
	E964411	56.3	57.2	0.009																		
	E964412	57.2	58.1	0.008																		
	E964413	58.1	59	0.008																		
	E964414	59	59.9	0.011																		
60	E964415	59.9	60.2	0.007	24.4	95.9	2	GG	FOL	Fg green-grey and black, banded mafic volcanics. Non-magnetic. Mod bt alteration, typically in irregular, locally folded bands, possibly pillow selvages.												
	E964416	60.2	61.2	0.008																		
	E964417	61.2	62.1	0.009																		
	E964418	62.1	63	0.009																		
	E964419	63	64	0.007																		
65	E964421	64	65	0.012																		
	E964422	65	66	0.009																		
	E964423	66	67	0.013																		
	E964424	67	68	0.009																		
	E964425	68	69	0.008																		
	E964426	69	70	0.01																		
70	E964427	70	71	0.006																		
	E964428	71	71.9	0.014																		
	E964429	71.9	72.8	0.005																		
	E964431	72.8	73.7	0.006																		
	E964432	73.7	74.6	0.005																		
75	E964433	74.6	75.5	0.005																		
	E964434	75.5	76.4	0.005																		
	E964435	76.4	77.3	0.006																		
	E964436	77.3	78.2	0.005																		
	E964437	78.2	79.2	0.007																		
	E964438	79.2	80.2	0.005																		

3-5% planar Qz-carb veins locally. Brittle faulting occurs from 42.4-45.1m. Trace to 0.25% patchy, wispy po mineralization, with 3% thready po from 27.9-28.5m and 95.6-95.9m. 7% po wisps and stringers from 92.6-93m.

18-KAZ-001

Depth	Assay				MAJOR UNIT						MINOR UNIT				ALTERATION						
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments
	E964438	79.2	80.2	0.005	24.4	95.9	2	GG	FOL	Fg green-grey and black, banded mafic volcanics. Non-magnetic. Mod bt alteration, typically in irregular, locally folded bands, possibly pillow selvages.	3-5% planar Qz-carb veins locally. Brittle faulting occurs from 42.4-45.1m. Trace to 0.25% patchy, wispy po mineralization, with 3% thready po from 27.9-28.5m and 95.6-95.9m. 7% po wisps and stringers from 92.6-93m.										
	E964439	80.2	81.2	0.005																	
	E964441	81.2	82.2	0.005																	
	E964442	82.2	82.7	0.005																	
	E964443	82.7	83.6	0.005																	
	E964444	83.6	84.5	0.005																	
85	E964445	84.5	85.4	0.005																	
	E964446	85.4	86.3	0.005																	
	E964447	86.3	87.3	0.005																	
	E964448	87.3	88.3	0.005																	
	E964449	88.3	88.6	0.03																	
	E964451	88.6	89.6	0.005																	
90	E964452	89.6	90.6	0.005																	
	E964453	90.6	91.6	0.005																	
	E964454	91.6	92.6	0.005																	
	E964455	92.6	93	0.005																	
	E964456	93	93.7	0.005																	
	E964457	93.7	94.4	0.005																	
	E964458	94.4	95	0.005																	
95	E964459	95	95.6	0.005																	
	E964461	95.6	95.9	0.005	95.9	96.2	6N	BK	DI	Fg black, brecciated argillaceous mudstone. Mod magnetic. Brecciated mudstone with ~15% sub-rounded chert fragments and 20% netted po stringer cement.											
	E964462	95.9	96.2	0.019																	
	E964463	96.2	97	0.005																	
	E964464	97	98	0.005																	
	E964465	98	99	0.005	96.2	100.1	2	GG	FOL	Fg green-grey, weakly foliated mafic volcanics. Non-magnetic. Weak patchy bt alteration, as well as irregular bands, possibly pillow selvages. 3% planar carb veins. 5% wispy po in 30cm adjacent to LC with underlying 4A.											
	E964466	99	99.8	0.005																	
100	E964467	99.8	100.1	0.005																	
	E964468	100.1	101	0.051	100.1	101.9	4A	BE	BA	Fg blue-grey and beige banded, chert-gru BIF. Weak-mod magnetic. Alternating, wavy, locally boudinaged chert bands and gru bands. Gru bands are weakly to mod magnetic locally, suggesting the gru has replaced previous mag bands. 1% po wisps.											
	E964469	101	101.9	0.029																	
	E964471	101.9	102.9	0.013																	
	E964472	102.9	103.9	0.011	101.9	105	2	GG	FOL	Grey-green, fg mafic metavolcanic (2) non-magnetic, well foliated, mod patchy Bt alt. ~5-7% Cb veins. no visible min. Gradational LC to UM.											
	E964473	103.9	104.4	0.009																	
	E964474	104.4	105	0.038																	
105	E964475	105	105.9	0.02	105	107.1	1	GG	FOL	grey-green, fg ultramafic (1) well foliated, non-magnetic, same mag sus as surrounding mafics. very soft - strong chl alt? Rare visible Bt. Weak to strong brittle faulting. No visible min. gradational LC.											
	E964476	105.9	106.5	0.023																	
	E964477	106.5	107.1	0.018																	
	E964478	107.1	108.1	0.022	107.1	108.1	2	GG	FOL	grey-green, fg mafic metavolcanic (2) non-magnetic, well foliated, weak brittle faulting sub-parallel to fabric, looks similar to UM above but much harder. No visible min. Sharp LC.											
	E964479	108.1	108.4	0.329																	
	E964481	108.4	109.4	0.013																	
110	E964482	109.4	110.4	0.013	108.1	128.5	4B	G	LA	Blue-grey to light and dark grey, fg chert-magnetite IF (4B) strongly magnetic, thinly laminated bands (<5mm) of chert and mag, 119.5-LC is highly strained, locally brecciated, and strongly folded with abundant mm scale brittle fractures/shears that run	most commonly axial planar. 5cm UM dike at 114.6m and 15cm at 124.8m. 0.5-3% Po stringers and diss. Sharp irregular LC.										
	E964483	110.4	111.4	0.005																	
	E964484	111.4	112.4	0.011																	
	E964485	112.4	113.1	0.158																	
	E964486	113.1	114	0.141																	
	E964487	114	114.9	0.015																	
115	E964488	114.9	115.8	0.007																	
	E964489	115.8	116.7	0.006																	
	E964491	116.7	117.6	0.011																	
	E964492	117.6	118.5	0.014																	
	E964493	118.5	119.5	0.024																	
	E964494	119.5	120.2	0.041																	













# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-002**

Project: **KAZ**

Mine Grid Easting: 10975.3956

Planned Depth(m): 131

Drill Start Date: 9/10/2018

Mine Grid Northing: 1840.8983

Actual Depth (m): 134

Drill End Date: 9/14/2018

Elevation: 5317.3784

Core Diameter: NQ

UTM East:

Plugged: YES

Target 1: SIF

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
14	249.92	-53.19	GYRO SHOT
28	250.16	-52.59	GYRO SHOT
45	251.4	-51.95	GYRO SHOT
60	251.77	-51.47	GYRO SHOT
74	252.55	-51.06	GYRO SHOT
89	252.21	-50.88	GYRO SHOT
105	251.89	-50.75	GYRO SHOT
120	253.21	-49.85	GYRO SHOT
134	255.47	-48.82	GYRO SHOT



















# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-012**

Project: **KAZ**

Mine Grid Easting: 11013.682

Planned Depth(m): 40

Drill Start Date: 9/9/2018

Mine Grid Northing: 1699.241

Actual Depth (m): 41

Drill End Date: 9/12/2018

Elevation: 5318.495

Core Diameter: NQ

UTM East:

Plugged: YES

Target 1: SIF

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N      Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.62	-61.965	GYRO SHOT
15	249.11	-61.54	GYRO SHOT
30	250.77	-60.91	GYRO SHOT
41	251.37	-60.58	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-013**

Project: **KAZ**

Mine Grid Easting: 11000.883

Planned Depth(m): 37

Drill Start Date: 9/7/2018

Mine Grid Northing: 1687.758

Actual Depth (m): 38

Drill End Date: 9/7/2018

Elevation: 5319.304

Core Diameter: NQ

UTM East:

Plugged: UNKNOWN

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.765	-62.084	EZS
15	249.15	-61.4	EZS
38	250.51	-61.01	EZS





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-025**

Project: **KAZ**

Mine Grid Easting: 11085.117

Planned Depth(m): 210

Drill Start Date: 9/1/2018

Mine Grid Northing: 1532.609

Actual Depth (m): 209

Drill End Date: 9/4/2018

Elevation: 5314.797

Core Diameter: NQ

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.68	-52.329	SURV
18	248.3	-49.85	GYRO SHOT
33	247.7	-50.08	GYRO SHOT
45	248.67	-49.5	GYRO SHOT
60	249.09	-49.19	GYRO SHOT
75	248.85	-48.97	GYRO SHOT
90	248.63	-48.68	GYRO SHOT
105	250.38	-48.5	GYRO SHOT
120	250.16	-48.47	GYRO SHOT
135	250.14	-48.45	GYRO SHOT
150	250.94	-48.31	GYRO SHOT
165	251.3	-48.37	GYRO SHOT
180	250.61	-48.25	GYRO SHOT
195	250.61	-48.09	GYRO SHOT
209	251.92	-47.82	GYRO SHOT





























# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-028**

Project: **KAZ**

Mine Grid Easting: 11093.309

Planned Depth(m): 49

Drill Start Date: 9/4/2018

Mine Grid Northing: 1508.189

Actual Depth (m): 50

Drill End Date: 9/5/2018

Elevation: 5314.745

Core Diameter: NQ

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.946	-55.299	GYRO SHOT
15	247.7	-50.08	GYRO SHOT
34	250.84	-53.88	GYRO SHOT
49	250.03	-53.52	GYRO SHOT









# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-034**

Project: **KAZ**

Mine Grid Easting: 11100.097

Planned Depth(m): 51

Drill Start Date: 8/25/2018

Mine Grid Northing: 1457.302

Actual Depth (m): 51

Drill End Date: 8/26/2018

Elevation: 5314.646

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Logged by Musselwhite Exploration Geologists Andrew Stone, P.Geo, and Michael D'Angelo

Collar Comments: Boxes 7 and 10-16 were dropped while slinging. Hole was redrilled as 18-KAZ-090. Quick logged, but sampled bottom 4.5m as 3-5% thready, Qz flooding/shear-hosted po similar to that seen in 18-KAZ-055, and unlike what was logged in 18-KAZ-090.

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.88	-64	SURV
15	249.71	-62.56	GYRO SHOT
30	250.44	-62.35	GYRO SHOT
45	250.46	-62.32	GYRO SHOT
51	251.72	-62.38	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-035**

Project: **KAZ**

Mine Grid Easting: 11099.067

Planned Depth(m): 46

Drill Start Date: 8/25/2018

Mine Grid Northing: 1456.788

Actual Depth (m): 47

Drill End Date: 8/26/2018

Elevation: 5314.694

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: SIF

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N      Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.88	-48.221	SURV
15	249.34	-46.28	GYRO SHOT
30	251.79	-45.82	GYRO SHOT
47	251.06	-45.43	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-036**

Project: **KAZ**

Mine Grid Easting: 11092.637

Planned Depth(m): 30

Drill Start Date: 8/27/2018

Mine Grid Northing: 1453.735

Actual Depth (m): 31

Drill End Date: 8/28/2018

Elevation: 5315.211

Core Diameter: NQ2

UTM East:

Plugged: UNKNOWN

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.061	-48.838	SURV
16	251.09	-47.8	EZS
31	249.23	-47.41	EZS





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-040**

Project: **KAZ**

Mine Grid Easting: 11123.073

Planned Depth(m): 38

Drill Start Date: 8/22/2018

Mine Grid Northing: 1412.952

Actual Depth (m): 39

Drill End Date: 8/23/2018

Elevation: 5314.067

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248	-63	SURV
15	247.6	-62.56	GYRO SHOT
34	248.45	-62.25	GYRO SHOT





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-041**

Project: **KAZ**

Mine Grid Easting: 11110.032

Planned Depth(m): 46

Drill Start Date: 8/23/2018

Mine Grid Northing: 1407.728

Actual Depth (m): 46

Drill End Date: 8/24/2018

Elevation: 5315.384

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.05	-63.19	SURV
16	248.5	-61.85	GYRO SHOT
31	248.6	-61.28	GYRO SHOT
46	247.44	-61.08	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-042**

Project: **KAZ**

Mine Grid Easting: 11110.032

Planned Depth(m): 41

Drill Start Date: 8/23/2018

Mine Grid Northing: 1407.728

Actual Depth (m): 42

Drill End Date: 8/23/2018

Elevation: 5315.384

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.05	-49	SURV
15	246.65	-48.41	GYRO SHOT
30	247.5	-48.38	GYRO SHOT
42	249.03	-48.27	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-047**

Project: **KAZ**

Mine Grid Easting: 11123.149

Planned Depth(m): 34

Drill Start Date: 8/29/2018

Mine Grid Northing: 1359.615

Actual Depth (m): 34

Drill End Date: 8/29/2018

Elevation: 5316.24

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	249.674	-70	SURV
16	251.62	-69.56	EZS
34	250.81	-69.32	EZS





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-048**

Project: **KAZ**

Mine Grid Easting: 11123.149

Planned Depth(m): 28

Drill Start Date: 8/29/2018

Mine Grid Northing: 1359.615

Actual Depth (m): 29

Drill End Date: 8/30/2018

Elevation: 5316.24

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: SIF

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	249.674	-50.967	SURV
15	250.62	-50.72	EZS
29	248.98	-49.71	EZS



18-KAZ-048

Depth	MAJOR UNIT			MINERALS						QTZ VEINING						FABRIC					FOLD					FAULT															
	From	To	Unit	As%	Cp%	Mt%	Po%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Tex	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments					
0	0	1.5	1CA SIN G																																						
5							3												7	7.1	45	MOD	S1																		
10	1.5	19.2	2				1				10.7	11.5	QZ-C A	20																											
							0.5				12.4	13.7	QZ-W H	15																											
15							0.2 5				14.5	15.3	QZ-W H	10																											
20	19.2	19.7	4B				7												18.7	18.8	50	MOD	FD																		
	19.7	20	4H				70																		19.2	20	50	INT	SZ												
	20	20.3	4B																						20.6	21	50	WEK	SZ												
	20.3	20.6	2				15																		20.6	21	45	INT	SZ												
	20.6	23.2	4B				5												22.7	22.8	50	MOD	S0																		
																										22.1	22.4	50	MOD	FD											
																										22.8	23.2	50	MOD	FD											
25	23.2	26	4H				15																																		
							3																																		
	26	29	2				0.5																																		
30																																									
35																																									

multiple discrete, axial planar shears/knife faults cutting through parasitic fold hinges  
 sheared interval of 4B  
 multiple discrete, axial planar shears/knife faults cutting through parasitic fold hinges  
 brecciated, po cemented 4B

# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-050**

Project: **KAZ**

Mine Grid Easting: 11133.614

Planned Depth(m): 45

Drill Start Date: 8/14/2018

Mine Grid Northing: 1325.991

Actual Depth (m): 45

Drill End Date: 8/20/2018

Elevation: 5317.111

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments: Hole not oriented

Logged by Musselwhite Exploration Geologists Andrew Stone, P.Geo, and Michael D'Angelo

## Survey

Depth	Azimuth	Dip	SurveyType
0	248	-52	SURV
15	247.85	-52.58	GYRO SHOT
30	249.25	-52.3	GYRO SHOT
45	249.86	-51.93	GYRO SHOT









18-KAZ-050

Depth	MAJOR UNIT			MINERALS						QTZ VEINING						FABRIC					FOLD					FAULT										
	From	To	Unit	As%	Cp%	Mt%	Po %	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Tex	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments
30.3	45	2					3 2												44.9	45	45	MOD	S1		43.4	44.1	40	MOD	SF							

# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-051**

Project: **KAZ**

Mine Grid Easting: 11115.598

Planned Depth(m): 35

Drill Start Date: 8/21/2018

Mine Grid Northing: 1323.8

Actual Depth (m): 36

Drill End Date: 8/21/2018

Elevation: 5318.274

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248	-68	SURV
15	248	-67.19	GYRO SHOT
36	249.49	-66.97	GYRO SHOT





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-052**

Project: **KAZ**

Mine Grid Easting: 11135.479

Planned Depth(m): 35

Drill Start Date: 8/15/2018

Mine Grid Northing: 1275.937

Actual Depth (m): 35

Drill End Date: 10/17/2018

Elevation: 5321.452

Core Diameter: NQ2

UTM East:

Plugged: UNKNOWN

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248	-76	GYRO SHOT
17	246.33	-76.02	GYRO SHOT
35	246.26	-75.87	GYRO SHOT

18-KAZ-052

Depth	Assay				MAJOR UNIT						MINOR UNIT			ALTERATION														
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments							
	E952246	0.2	1	0.005	0	0.2	CAS ING/ 2																					
	E952247	1	2	0.006																								
	E952248	2	3	0.013																								
	E952249	3	4	0.007																								
5	E952251	4	5	0.071																								
	E952252	5	6	0.007																								
	E952253	6	7	0.035																								
	E952254	7	7.8	0.005	0.2	15.1					Fg green-grey and black, mod foliated/weakly banded mafic volcanics. Non-magnetic. Weak to mod, wispy to locally banded bt alteration. 1-3% wispy Qz-carb veins throughout. Two possible narrow 6Ns at 7.8-8m, 9.2-9.4m and a potential third, larger	one from 9.9-10.7m. The larger one is folded, and looks like it may be a brecciated/strained, biotitized/silicified mafic in the fold hinge. Another 20cm shear occurs directly adjacent to the underlying 6N. 3-5% netted po stringers in the narrow 6Ns.	6N															
	E952255	7.8	8.2	0.123																								
	E952256	8.2	8.6	0.005																								
	E952257	8.6	9.5	0.027																								
10	E952258	9.5	9.8	0.006																								
	E952259	9.8	10.7	0.016																								
	E952261	10.7	11.7	0.009																								
	E952262	11.7	12.6	0.005																								
	E952263	12.6	13.5	0.013																								
	E952264	13.5	14	0.007																								
	E952265	14	14.6	0.009																								
15	E952266	14.6	15.1	0.019																								
	E952267	15.1	16	0.146	15.1	17	6N	BK	DI	Fg black, mod foliated, distorted/brecciated argillaceous mudstone. Weakly magnetic. Hard, silica-rich(?) sediment with local mod wispy bt alteration and abundant sub-angular blue-grey Qz fragments. Unit is highly strained/sheared.	~15% netted/interstitial po.																	
	E952268	16	17	0.085																								
	E952269	17	17.8	0.077																								
	E952271	17.8	18.8	0.04	17	20.5	2	GG	FOL	Fg strongly foliated/sheared mafic volcanics. Non-magnetic. Mod banded/wispy bt and chl alteration. ~10% wispy/irregular blue-grey Qz sweets. Gradational sheared contacts with over-/underlying contacts. Trace to 0.25% wispy po.																		
	E952272	18.8	19.7	0.102																								
20	E952273	19.7	20.5	0.038																								
	E952274	20.5	21.5	0.302	20.5	21.5	6N	BK	DI	Fg black, mod foliated, distorted/brecciated argillaceous mudstone. Weakly magnetic. Hard, silica-rich(?) sediment with local mod wispy bt alteration and abundant sub-angular blue-grey Qz fragments. Unit is highly strained/sheared.	~10% netted/interstitial po.																	
	E952275	21.5	22.3	0.047	21.5	27.4	2	GG	FOL	Fg strongly foliated/sheared mafic volcanics. Non-magnetic. Mod banded/wispy bt and chl alteration. Stronger strain associated with mod patchy bt alteration, mod pervasive bands of carb alteration associated with 5% py and 1% po hosted in fractures.																		
	E952276	22.3	22.9	0.012																								
	E952277	22.9	23.4	0.027																								
	E952278	23.4	24	0.245																								
	E952279	24	24.4	0.172																								
25	E952281	24.4	24.8	4.95																								
	E952282	24.8	25.5	0.368																								
	E952283	25.5	26.2	0.035																								
	E952284	26.2	26.9	0.013																								
	E952285	26.9	27.4	0.012																								
	E952286	27.4	28.3	0.026	27.4	28.3	6N	BK	DI	Fg black, mod foliated, distorted/brecciated argillaceous mudstone. Weakly magnetic. Hard, silica-rich(?) sediment with local mod wispy bt alteration and abundant sub-angular blue-grey Qz fragments. Unit is highly strained/sheared.	Fabric gently flips orientation across the unit, indicating it may represent some sort of primary bedding that's been folded. ~10% netted/interstitial po.																	
	E952287	28.3	29	0.02																								
30	E952288	29	29.9	0.02																								
	E952289	29.9	30.8	0.012																								
	E952291	30.8	31.7	0.01	28.3	35	2	GG	FOL	Fg green-grey, massive to weakly foliated mafic volcanics. Non-magnetic. Weak patchy to pervasive bt alteration. 5% wispy/diss py and 3% wispy/diss po associated with mod-strong banded bt alteration.	EOH																	
	E952292	31.7	32.6	0.005																								
	E952293	32.6	33.4	0.005																								
	E952294	33.4	34.2	0.005																								
35	E952295	34.2	35	0.024																								





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-053**

Project: **KAZ**

Mine Grid Easting: 11135.479

Planned Depth(m): 45

Drill Start Date: 9/18/2018

Mine Grid Northing: 1275.937

Actual Depth (m): 23

Drill End Date: 9/18/2018

Elevation: 5321.452

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test: NO

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
17	248.95	-45.63	GYRO SHOT





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-054**

Project: **KAZ**

Mine Grid Easting: 11150.273

Planned Depth(m): 150

Drill Start Date: 8/31/2018

Mine Grid Northing: 1255.604

Actual Depth (m): 200

Drill End Date: 9/4/2018

Elevation: 5319.162

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: GEOCALL

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -47 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.96	-47	SURV
14	259.33	-46.01	GYRO SHOT
29	253.06	-45.97	GYRO SHOT
44	251.65	-45.37	GYRO SHOT
59	251.17	-44.82	GYRO SHOT
74	254.03	-44.23	GYRO SHOT
89	256.27	-43.87	GYRO SHOT
104	257.78	-43.53	GYRO SHOT
119	255.49	-43.57	GYRO SHOT
134	256.81	-43.48	GYRO SHOT
149	255.86	-42.96	GYRO SHOT
164	255.72	-42.4	GYRO SHOT
179	258.4	-41.91	GYRO SHOT
194	260.78	-41.61	GYRO SHOT





18-KAZ-054

Depth	Assay				MAJOR UNIT							MINOR UNIT		ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments		
	E882925	80	81	0.005	56.5	88.3	2	GG	FOL	Dark green; fine grained; mod to well foliated. Mafic metavolcanic. Weak wispy biotite alt. Sporadic qz veins .1-20cm wide parallel to fabric. Trace to .5% fine grained blebby and diss PO-PY observed along vein margins and fractures. ~20cm 6N at	58.3m – 5-6% threads of PO. Sharp LC												
	E882926	81	82	0.005																			
	E882927	82	83	0.005																			
	E882928	83	84	0.008																			
	E882929	84	85	0.005																			
	E882931	85	86	0.006																			
	E882932	86	86.5	0.005																			
	E882933	86.5	87.5	0.02																			
	E882934	87.5	88.3	0.027	88.3	89.7	6N	B	DI	Brown-black; fine grained; moderately distorted. Pyrrhotite bearing argillaceous mudstone – 5-10cm Bvol intervals in upper half. 7-8% fine grained blebby PO netted stringers/threads. Minor carb veinlets. Incipient amph alt associated with	mineralization. Sharp LC												
	E882935	88.3	89	0.007																			
	E882936	89	89.7	0.008	89.7	95.8	2	DG	FOL	Dark green; fine grained; fine grained. Mafic metavolcanic. Mod localized pervasive biotite alt. 1-2% irregular qz veins, light green alteration halo. Trace blebby PO. 2-3% blebby mg PY stringers. ~15cm 6N at 91.8m 7-8% fg PO, ~.3% blebby AS. Sharp LC													
	E882937	89.7	90.7	0.005																			
	E882938	90.7	91.7	0.005																			
	E882939	91.7	92.2	0.039																			
	E882941	92.2	93.2	0.028																			
	E882942	93.2	93.8	0.011																			
	E882943	93.8	94.8	0.007	95.8	96.3	4B	G	BA	Light brown-grey; fine grained; moderately banded. Chert-magnetite iron formation – weakly magnetic, bordering on 4CH. 3-8% fine to med grained PO-PY stringers. Two 2-3cm Bvol intervals. Chert bands appear to be recrystallized. Sharp LC													
	E882944	94.8	95.8	0.005																			
	E882945	95.8	96.3	0.005																			
	E882946	96.3	97.1	0.005																			
	E882947	97.1	98.1	0.005	96.3	100.2	2	DG	FOL	Dark green; fine grained; mod foliated to massive. Mafic metavolcanic. Weak pervasive biotite alt. Rare irregular qz veins + 1% blebby PO. 1-2% qz-cb veins, locally infilling fractures. ~10cm chert bands at LC, pale brown-beige, non-magnetic. Sharp LC													
	E882948	98.1	99.1	0.006																			
	E882949	99.1	99.6	0.005																			
	E882951	99.6	100.2	0.005																			100.2
	E882952	100.2	101.2	0.005																			
	E872832	101.2	101.8	0.007																			
	E872833	101.8	102.6	0.005	101.8	107.1	2	DG	FOL	Dark green-grey; fine to med grained; massive to mod foliated. Mafic metavolcanic. Mod to strong pervasive biotite alt. Coarser grained intervals less foliated. Mod brittle fractures – mod slicken surfaces. 2-3% fabric parallel qz +/- cb. Trace diss	PO. Sharp LC												
	E872834	102.6	103.5	0.005																			
	E872835	103.5	104.4	0.005																			
	E872836	104.4	105.3	0.005																			
	E872837	105.3	106.2	0.005																			
	E872838	106.2	107.1	0.005																			107.1
	E872839	107.1	107.5	0.007																			
	E872841	107.5	108	0.005	107.5	108.6	2	DG	FOL	Grey-green; fine grained; moderately foliated. Mafic metavolcanic. Mod to strong pervasive biotite alt, increasing downhole. ~10cm chert-mag band at 108m. ~1% fabric parallel qz-cb veinlets. Trace fine grained PO along fractures. Sharp LC													
	E872842	108	108.6	0.005																			
	E872843	108.6	109.3	0.182	108.6	113.3	4B	G	LA	Grey-beige; fine grained; well laminated. Chert-magnetite iron formation – weak grun alt on margins of mag bands. ~20cm Bvol intervals at 109.5&110.3m – likely structurally imposed (due to tight folding). Strong localized folding. 2-4% fine grained PO	stringers in folded intervals – trace PY. Sharp LC												
	E872844	109.3	110	0.082																			
	E872845	110	110.7	0.035																			
	E872846	110.7	111.4	0.048																			
	E872847	111.4	112.1	0.042																			
	E872848	112.1	112.9	0.005																			
	E872849	112.9	113.3	0.01																			
	E872851	113.3	114.1	0.011	114.1	120.5	4B	GG	LA	Grey-beige; fine grained; well laminated. Chert-magnetite IF – weak to mod grun alt. Highly deformed and folded 1-15cm Bvol intervals structurally imposed in lower 1m. Narrow 1-3mm wide shears analogous to larger 4H style breccias/shears – offsetting	banding. Trace to 3% fine grained PO stringers along brittle fractures and in HZ's. Sharp LC												
	E872852	114.1	114.9	0.042																			
	E872853	114.9	115.5	0.006																			
	E872854	115.5	116.5	0.005																			
	E872855	116.5	117.5	0.005																			
	E872856	117.5	118.5	0.143																			
	E872857	118.5	119.5	0.025																			
	E872858	119.5	120.5	0.035																			



Depth	Assay				MAJOR UNIT					MINOR UNIT		ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments
	E872858	119.5	120.5	0.035	114.1	120.5	4B	GG	LA	Grey-beige; fine grained; well laminated. Chert-magnetite IF – weak to mod grun alt. Highly deformed and folded 1-15cm Bvol intervals structurally imposed in lower 1m. Narrow 1-3mm wide shears analogous to larger 4H style breccias/shears – offsetting Fg green-grey, mod foliated, distorted mafic volcanics. Non-magnetic. Weak, wispy bt alteration. ~15-20% irregular white-grey Qz veining. Veining is sheared/distorted. Fg blue-grey, banded chert-mag BIF. Strongly magnetic. Alternating bands of tightly folded chert and mag, with minor to mod gru along band margins. Two 20-40cm wide intensely folded intervals are separated by areas with more parallel banding.	banding. Trace to 3% fine grained PO stringers along brittle fractures and in HZ's. Sharp LC Sharp UC/LC, but there is an ~10cm interval of mafic volcanics just above the UC in the overlying 4B perpendicular to the core-axis. Fold hinges commonly cut by sharp, axial-planar shears/knife faults, similar to those observed in the surface SIF o/c. 0.5% wispy po in folded and non-folded intervals.										
	E872859	120.5	121.2	0.12	120.5	121.2	2	DG	FOL												
	E872861	121.2	121.7	0.019																	
	E872862	121.7	122.3	0.028																	
	E872863	122.3	123.3	0.01																	
	E872864	123.3	124	0.019																	
	E872865	124	125	0.058	121.2	126.9	4B	BG	BA												
	E872866	125	126	0.024																	
	E872867	126	126.9	0.005																	
	E872868	126.9	127.7	0.008	126.9	128.5	1	GG	FOL			~20cm of mafic volcanics between overlying 4B and top of ultramafic.									
	E872869	127.7	128.5	0.006																	
	E872871	128.5	129.4	0.006																	
130	E872872	129.4	130.3	0.012						Local sharp, discrete shears cut across banding, and are sub-parallel to axial planes of parasitic folds where they are present. HZ/SZ from 131.1-131.6 with sharp contacts contains ~7% po stringers and wisps + 3% 1-2mm asp porphyroblasts.											
	E872873	130.3	131	0.01	128.5	134.5	4B	BG	BA												
	E872874	131	131.6	0.139																	
	E872875	131.6	132.1	0.043																	
	E872876	132.1	132.6	0.094																	
	E872877	132.6	133.2	0.208																	
	E872878	133.2	133.8	0.024																	
	E872879	133.8	134.1	0.067																	
	E872881	134.1	134.5	0.176																	
	E872882	134.5	135.5	0.01																	
	E872883	135.5	136.5	0.005																	
	E872884	136.5	137.5	0.005																	
	E872885	137.5	138.5	0.005																	
	E872886	138.5	139.5	0.005																	
140	E872887	139.5	140.5	0.007	134.5	144.4	2	GG	FOL	Fg grey to dark grey, mod foliated mafic volcanics. Non-magnetic. Weak wispy to mod banded bt alteration. ~1% narrow (<1m) carb veinlets. Orientation marks flip 180 degrees at broken core at 140m, so orientation is suspect above and below in C3.											
	E872888	140.5	141.5	0.005																	
	E872889	141.5	142.5	0.005																	
	E872891	142.5	143.5	0.005																	
	E872892	143.5	144.4	0.005																	
	E872893	144.4	144.7	0.163	144.4	144.7	6N	BK	FOL	Fg black, laminated/distorted argillaceous mudstone. Weakly magnetic. Unit is mod-intensely sheared, and is potentially a sheared mafic volcanic along the contact of the underlying 4B rather than a typical 6N which typically aren't as sheared and	contain significantly more po. Chert bands in gru-rich section are highly strained, pinched/swelled/boudinaged, probably related to shearing in overlying 6N. Gru alteration appears significant in upper part due to overprinting by beige colour, but still strongly magnetic.										
145	E872894	144.7	145.5	0.007	144.7	146.2	4B	BG	BA	Fg blue-grey and beige, banded chert-mag BIF. Strongly magnetic. Alternating bands of blue-grey chert and wispy, beige gru in upper portion giving way to black bands of mag in lower portion of unit.											
	E872895	145.5	146.2	0.039																	
	E872896	146.2	147	0.005																	
	E872897	147	148	0.009	146.2	148.8	2	GG	FOL	Fg grey, weakly foliated mafic volcanics. Non-magnetic. Weak patchy/wispy bt alteration. Unit contains numerous brittle fractures, but they appear to be mechanical in nature. ~20-25cm wide UM at LC.											
	E872898	148	148.8	0.005																	
	E872899	148.8	149.7	0.099																	
150	E872901	149.7	150.2	0.028						Fg blue-grey, finely laminated to banded chert-mag BIF. Strongly magnetic. Unit is predominantly composed of finely laminated, parallel chert-mag laminae, but there are narrow distorted sections with pinched/swelled/boudinaged chert bands.	Trace to 0.5% asp associated with these distorted areas. Minor parasitic folding locally.										
	E872902	150.2	150.6	0.005																	
	E872903	150.6	151.2	0.044																	
	E872904	151.2	152.1	0.025	148.8	154.9	4B	BG	BA												
	E872905	152.1	153	0.073																	
	E872906	153	154	0.094																	
	E872907	154	154.9	0.086																	
	E872908	154.9	155.2	0.008	154.9	155.2	2	GG	FOL			Fg grey/green-grey, mod foliated mafic volcanics. Non-magnetic. Weak wispy bt alteration.									
	E872909	155.2	155.6	0.027	155.2	155.6	4B	BG	BA			Fg dark-green/blue-grey, banded oxide BIF(?). Strongly magnetic. Alternating 3-4cm wide bands of dark green-grey rock, which appears to be mafic volcanics, and blue-grey, strongly magnetic chert (+/- mag?).									
	E872911	155.6	156.6	0.005																	
	E872912	156.6	157.6	0.005																	
	E872913	157.6	158	0.005	155.6	177.6	2	GG	FOL	Fg grey/green-grey, mod foliated mafic volcanics. Non-magnetic. Weak wispy bt alteration.	Unit was logged as a 4B, but might just be a sheared mafic volcanic with po-rich shear veins, as the po stringers in the mafic-looking bands is strongly magnetic. 5% thready/stringers of po.										
	E872914	158	159	0.014																	
	E872915	159	159.8	0.005																	
	E872916	159.8	160.5	0.005																	

Depth	Assay				MAJOR UNIT						MINOR UNIT		ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E872916	159.8	160.5	0.005																		
	E872917	160.5	161	0.01																		
	E872918	161	161.6	0.005																		
	E872919	161.6	162.4	0.474																		
	E872921	162.4	163.1	0.005																		
	E872922	163.1	163.5	0.005																		
	E872923	163.5	164.2	0.005																		
165	E872924	164.2	165.2	0.005																		
	E872925	165.2	166.2	0.005																		
	E872926	166.2	167.2	0.005																		
	E872927	167.2	168.2	0.005																		
	E872928	168.2	169.2	0.005	155.6	177.6	2	GG	FOL	Fg grey/green-grey, mod foliated mafic volcanics. Non-magnetic. Weak wispy bt alteration.												
170	E872929	169.2	170.1	0.005																		
	E872931	170.1	171	0.005																		
	E872932	171	172	0.007																		
	E872933	172	173	0.061																		
	E872934	173	174	0.007																		
	E872935	174	174.9	0.008																		
175	E872936	174.9	175.8	0.005																		
	E872937	175.8	176.7	0.005																		
	E872938	176.7	177.6	0.005																		
	E872939	177.6	178.5	0.01	177.6	178.5	6N	BK	FOL	Fg black, strongly foliated argillaceous mudstone. Weakly magnetic. Strongly foliated (sheared?) black, siliceous matrix with ~7% fabric parallel wisps/threads of po. Local coarser-grained, irregularly shaped (fracture/void filling?) po. Sharp UC/LC.												
	E872941	178.5	179.1	0.012	178.5	179.1	1	G	MA	Fg dark-grey, mod foliated ultramafic. Weakly magnetic (po). Pervasive soft, med-dark grey talc/serp alteration. 5% fine wisps of fabric parallel po.												
	E872942	179.1	180	0.015	179.1	180	6N	BK	LA	Fg black, strongly foliated argillaceous mudstone. Weakly magnetic. Strongly foliated (sheared?) black, siliceous matrix with ~7% fabric parallel wisps/threads of po. Local coarser-grained, irregularly shaped (fracture/void filling?) po. Sharp UC/LC.												
180	E872943	180	180.5	0.008																		
	E872944	180.5	181.1	0.009																		
	E872945	181.1	182	0.009																		
	E872946	182	183	0.005																		
	E872947	183	184	0.005																		
	E872948	184	185	0.005																		
185	E872949	185	186	0.005																		
	E872951	186	187	0.005																		
	E872952	187	188	0.005																		
	E872953	188	189	0.005																		
	E872954	189	190	0.005																		
190	E872955	190	191	0.005	180	200	2	GG	FOL	Fg green-grey, mod foliated, weak-mod banded mafic volcanics. Non-magnetic. Weak-mod banded bt alteration. ~3% narrow (<5mm) Qz-carb veins.												
	E872956	191	191.8	0.01																		
	E872957	191.8	192.6	0.012																		
	E872958	192.6	193.4	0.006																		
	E872959	193.4	194.2	0.009																		
	E872961	194.2	194.7	0.007																		
195	E872962	194.7	195.3	0.005																		
	E872963	195.3	195.7	0.005																		
	E872964	195.7	196.5	0.005																		
	E872965	196.5	197.4	0.01																		
	E872966	197.4	198.4	0.005																		
	E872967	198.4	199.2	0.005																		
200	E872968	199.2	200	0.005																		

3% po from UC to 181.1m. Po occurs as fabric parallel wisps/threads as well as coarser grained fracture/void fills, similar to overlying 6N. Trace to 0.25% wispy po in rest of unit. EOH.











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-055**

Project: **KAZ**

Mine Grid Easting: 11150.273

Planned Depth(m): 210

Drill Start Date: 8/12/2018

Mine Grid Northing: 1255.604

Actual Depth (m): 210

Drill End Date: 8/31/2018

Elevation: 5319.162

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: GEOCALL - Conditional hole based on results - confirm move with Geologist  
To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -64 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.96	-63.931	SURV
15	243.75	-63.54	GYRO SHOT
30	253.3	-63.12	GYRO SHOT
45	253.98	-62.88	GYRO SHOT
60	250.85	-62.44	GYRO SHOT
75	253.3	-62.03	GYRO SHOT
90	254.05	-61.81	GYRO SHOT
105	256.32	-61.89	GYRO SHOT
120	254.09	-61.78	GYRO SHOT
135	255.38	-61.62	GYRO SHOT
150	255.09	-61.3	GYRO SHOT
165	255.11	-61.27	GYRO SHOT
180	257.11	-61.16	GYRO SHOT
195	259.08	-61.16	GYRO SHOT
210	259.33	-60.98	GYRO SHOT





18-KAZ-055

Depth	Assay				MAJOR UNIT						MINOR UNIT		ALTERATION								
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments
	E868681	39.3	40.1	0.035	17.8	65.8	2	GG	FOL	Fg green-grey, strongly foliated mafic volcanics. Non-magnetic to weakly magnetic locally, 3-5% 1-3mm elongated, white 'spots', possibly stretched vesicles. 1-3% Qz veining. Mod banded bt alteration. Trace to 0.25% wispy po parallel to fabric.	A number of HZ occur in upper part of unit, and are associated with 10-30% Qz veining/flooding, mod-strong banded bt and chl alteration, and locally up to 20% po. Po is strongly magnetic, unusual for Musselwhite.										
	E868682	40.1	41	0.047																	
	E868683	41	42	0.024																	
	E868684	42	42.5	0.087																	
	E868685	42.5	43.4	0.005																	
	E868686	43.4	44.3	0.005																	
45	E868687	44.3	45.2	0.005																	
	E868688	45.2	46.1	0.008																	
	E868689	46.1	47	0.023																	
	E868691	47	47.9	0.006																	
	E868692	47.9	48.8	0.009																	
	E868693	48.8	49.6	0.008																	
50	E868694	49.6	50.5	0.14																	
	E868695	50.5	51.4	0.225																	
	E868696	51.4	52	0.89																	
	E868697	52	52.5	0.159																	
	E868698	52.5	53.4	0.65																	
	E868699	53.4	54.3	0.022																	
55	E868701	54.3	55.2	0.017																	
	E868702	55.2	56.1	0.045																	
	E868703	56.1	57	0.036																	
	E868704	57	57.9	0.005																	
	E868705	57.9	58.8	0.005																	
	E868706	58.8	59.8	0.005																	
60	E868707	59.8	60.8	0.096																	
	E868708	60.8	61.6	0.035																	
	E868709	61.6	62.3	0.092																	
	E868711	62.3	63	0.01																	
	E868712	63	63.6	0.005																	
	E868713	63.6	64.2	0.005																	
	E868714	64.2	65	0.005																	
65	E868715	65	65.8	0.006																	
	E868716	65.8	66.1	0.005	65.8	66.1	QZ VN	W	MA	Fg blue-grey/white, massive Qz vein. Non-magnetic.											
	E868717	66.1	67	0.005																	
	E868718	67	68	0.011																	
	E868719	68	68.8	0.005																	
	E868721	68.8	69.8	0.005																	
70	E868722	69.8	70.8	0.005																	
	E868723	70.8	71.8	0.005																	
	E868724	71.8	72.8	0.005																	
	E868725	72.8	73.8	0.005	66.1	89.6	2	GG	FOL	Fg green-grey, mod foliated, 'stripy' mafic volcanics. Non-magnetic. Weak-mod wispy, locally banded bt alteration. 1-3% wispy white Qz veins/stringers. Trace to 0.25% wispy, fabric parallel po.											
	E868726	73.8	74.8	0.005																	
75	E868727	74.8	75.8	0.005																	
	E868728	75.8	76.8	0.011																	
	E868729	76.8	77.8	0.009																	
	E868731	77.8	78.8	0.005																	
	E868732	78.8	79.8	0.005																	
	E868733	79.8	80.8	0.012																	

18-KAZ-055

Depth	Assay				MAJOR UNIT							MINOR UNIT		ALTERATION																			
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments												
	E868733	79.8	80.8	0.012	66.1	89.6	2	GG	FOL	Fg green-grey, mod foliated, 'stripy' mafic volcanics. Non-magnetic. Weak-mod wispy, locally banded bt alteration. 1-3% wispy white Qz veins/stringers. Trace to 0.25% wispy, fabric parallel po.																							
	E868734	80.8	81.8	0.018																													
	E868735	81.8	82.8	0.005																													
	E868736	82.8	83.8	0.005																													
	E868737	83.8	84.8	0.005																													
	E868738	84.8	85.8	0.017																													
	E868739	85.8	86.8	0.012																													
	E868741	86.8	87.8	0.021																													
	E868742	87.8	88.8	0.012																													
	E868743	88.8	89.6	0.025																													
85	E868744	89.6	90.2	0.005	89.6	90.2	QTZ VN	G	MA	Grey; medium grained; Smokey grey quartz vein. 1-2% wispy amph-chl clots. Trace fine grained blebby threads of PO remobilized along fractures. Sharp contacts																							
	E868745	90.2	90.8	0.006	90.2	91.4	2	GG	FOL	Green; fine grained; moderately foliated. Mafic metavolcanic. Moderate pervasive biotite alt. .5-1cm qz-cb veins with light green alteration halos. Trace to 1% fine grained disseminations and threads of PO within groundmass and qz veins. Sharp LC																							
	E868746	90.8	91.4	0.005																													
	E868747	91.4	91.9	0.005	91.4	91.9	QTZ VN	W	MA	Grey; medium grained; Smokey grey quartz vein. 2-3% wispy amph-chl clots. Trace fine grained blebby threads of PO remobilized along fractures. Sharp contacts																							
	E868748	91.9	92.3	0.005																													
	E868749	92.3	93	0.005	91.9	210	2	GG	FOL	Green; fine grained; mod to well foliated. Mafic metavolcanic. Weak to mod pervasive biotite alt. Trace to .5% fine grained diss and blebby threads of PO sporadically throughout – locally associated with crack seal qz veins. Mod to strong brittle and												ductile faulting. 1-3% irregular qz veins – pale green alt halo locally. EOH											
	E868751	93	94	0.005																													
	E868752	94	95	0.005																													
	E868753	95	96	0.005																													
	E868754	96	97	0.005																													
	E868755	97	98	0.005																													
	E868756	98	99	0.005																													
	E868757	99	100	0.005																													
95	E868758	100	101	0.005																													
	E868759	101	102	0.005																													
	E868761	102	103	0.005																													
	E868762	103	104	0.005																													
	E868763	104	105	0.005																													
100	E868764	105	106	0.005																													
	E868765	106	107	0.005																													
	E868766	107	108	0.005																													
	E868767	108	109	0.005																													
	E868768	109	110	0.005																													
105	E868769	110	111	0.005																													
	E868771	111	112	0.005																													
	E868772	112	113	0.005																													
	E868773	113	114	0.005																													
	E868774	114	115	0.005																													
110	E868775	115	116	0.013																													
	E868776	116	117	0.005																													
	E868777	117	118	0.005																													
	E868778	118	119	0.005																													
	E868779	119	120	0.026																													
	E868781	120	121	0.005																													





















# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-056**

Project: **KAZ**

Mine Grid Easting: 11136.721

Planned Depth(m): 190

Drill Start Date: 8/20/2018

Mine Grid Northing: 1249.098

Actual Depth (m): 183

Drill End Date: 8/26/2018

Elevation: 5319.919

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: GEOCALL

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -45 degrees

Collar Comments: Orientation marks flip at a broken piece of core at 43m. Marks are C1 above and below this point, but the lower C1 is most likely correct, as it indicates fabric ares teeply dipping sub-vertically rather than sub-horizontal. Logged by Musselwhite Exploration Geologists Andrew Stone, P.Geo, and Michael D'Angelo

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.35	-44.983	SURV
16	249.84	-43.91	GYRO SHOT
31	249.36	-43.31	GYRO SHOT
46	249.9	-42.64	GYRO SHOT
61	252.65	-41.93	GYRO SHOT
76	251.33	-41.29	GYRO SHOT
91	252.82	-40.56	GYRO SHOT
106	253.32	-40.13	GYRO SHOT
121	254.61	-39.18	GYRO SHOT
136	254.18	-38.19	GYRO SHOT
151	260.32	-37.13	GYRO SHOT
160	254.94	-36.5	GYRO SHOT
166	254.94	-36.5	GYRO SHOT

18-KAZ-056

Depth	Assay				MAJOR UNIT							MINOR UNIT		ALTERATION								
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E882801	0	1	0.005																		
	E882802	1	2	0.005																		
	E882803	2	3	0.005																		
	E882804	3	4	0.005	0	7	2	G	FOL	Fg green-grey, mod foliated mafic volcanics. Non-magnetic. Mod wispy/banded bt alteration. ~1% carb stringers. Brittle fracture zone from 0.3-0.5m.												
5	E882805	4	5	0.006																		
	E862456	5	6	0.011																		
	E862457	6	7	0.131																		
	E862458	7	7.4	0.083																		
	E862459	7.4	8	0.33	7	8	4B	BG	BA	Fg blue-grey and black banded chert-mag BIF. Strongly magnetic. Alternating chert and mag bands. Strongly deformed, with abundant tight, parasitic folding. Abundant healed knife faults. 3% wispy po from 7-7.4m												
	E862461	8	9	0.005																		
10	E862462	9	10	0.011																		
	E882806	10	11	0.005																		
	E882807	11	12	0.005																		
	E882808	12	13	0.005																		
	E882809	13	14	0.005																		
15	E882811	14	15	0.005	8	21	2	GG	FOL	Fg grey-green, mod foliated mafic volcanics. Non-magnetic. Weak wispy/patchy, to locally banded bt alteration. ~1% locally folded narrow white Qz veins. 15% planar white Qz veins associated with mod wispy/banded bt alteration from 19.9-20.8m.												
	E882812	15	16	0.005																		
	E882813	16	17	0.007																		
	E882814	17	18	0.007																		
	E882815	18	19	0.017																		
20	E862463	19	20	0.046																		
	E862464	20	21	0.02																		
	E862465	21	21.5	2.08	21	21.5	4B	BG	BA	Fg blue-grey and beige banded chert-mag BIF. Strongly magnetic. Alternating bands of chert and mag, with irregular pinch-swell and undulations. Mod pervasive gru +/- act alteration in mag bands.												
	E862466	21.5	21.8	0.019	21.5	21.8	2	GG	FOL	Fg green-grey, weakly foliated mafic volcanics. Non-magnetic. Weak pervasive chl alteration. Sharp UC/LC.												
	E862467	21.8	22.7	1.26																		
	E862468	22.7	23.6	4.46																		
	E862469	23.6	24.6	3.28	21.8	26.7	4B	BG	BA	Fg blue-grey and beige banded chert-mag BIF. Strongly magnetic. Alternating bands of chert and mag, with irregular pinch-swell and undulations. Mod pervasive gru + act alteration in mag bands.												
25	E862471	24.6	25.5	0.602																		
	E862472	25.5	26.1	0.648																		
	E862473	26.1	26.7	0.711																		
	E862474	26.7	27.7	0.036																		
	E862475	27.7	28.7	0.008																		
	E882816	28.7	29.5	0.014																		
30	E882817	29.5	30.3	0.009	26.7	34.1	2	GG	FOL	Fg green-grey mod foliated mafic volcanics. Non-magnetic. Weak patchy bt, pervasive chl alteration throughout. 1-3% wispy carb stringers. 0.5% wispy po from 32.9-34.1m above LC.												
	E882818	30.3	30.9	0.007																		
	E862476	30.9	31.9	0.005																		
	E862477	31.9	32.9	0.005																		
	E862478	32.9	33.5	0.005																		
	E862479	33.5	34.1	0.005																		
	E862481	34.1	34.4	0.009	34.1	34.4	4B	BG	BA	Fg blue-grey and black banded chert-mag BIF. Strongly magnetic. Alternating bands of chert and mag in a narrow BIF interval. Little to no gru alteration, unlike in overlying 4Bs. 3% po as threads as well as wispy fracture fills in chert bands.												
	E862482	34.4	34.9	0.005																		
35	E862483	34.9	35.5	0.007																		
	E862484	35.5	36.1	0.078																		
	E862485	36.1	37.1	0.019	34.4	44.3	2	G	FOL	Fg green-grey mod foliated mafic volcanics. Non-magnetic. Weak patchy bt, pervasive chl alteration throughout. 1-3% wispy carb stringers. HZ from 36.2-37.4m associated with mod-strong wispy bt alteration and 3-5% wispy carb alteration/veining.												
	E862486	37.1	38.1	0.019																		
	E862487	38.1	39.1	0.007																		
	E862488	39.1	39.9	0.008																		
	E862489	39.9	40.6	0.007																		

Strong internal parasitic folding, with local boudinaged of thicker chert bands. 1% wispy/thready po.

Three 2-3cm wide mafic dykelets. 3% po threads and minor wisps concentrated along margins of chert bands. Trace wispy asp.

0.25% fabric parallel, wispy po from 36.1-38.1m and 41.3m to LC.





















# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-058**

Project: **KAZ**

Mine Grid Easting: 11167.201

Planned Depth(m): 52

Drill Start Date: 9/9/2018

Mine Grid Northing: 1237.088

Actual Depth (m): 53

Drill End Date: 9/10/2018

Elevation: 5320.479

Core Diameter: NQ2

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.282	-49.282	GYRO SHOT
14	250.74	-48.66	GYRO SHOT
29	249.04	-48.57	GYRO SHOT
44	248.6	-48.37	GYRO SHOT
53	250.66	-48.24	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-059**

Project: **KAZ**

Mine Grid Easting: 11156.519

Planned Depth(m): 200

Drill Start Date: 9/4/2018

Mine Grid Northing: 1233.672

Actual Depth (m): 251

Drill End Date: 9/8/2018

Elevation: 5320.888

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: GEOCALL

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -46 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.79	-46.194	GYRO SHOT
14	251.77	-45.03	GYRO SHOT
29	251.65	-44.78	GYRO SHOT
44	250.46	-44.47	GYRO SHOT
59	252.73	-44.28	GYRO SHOT
89	253.48	-44.18	GYRO SHOT
104	251.92	-44.09	GYRO SHOT
119	254.68	-43.65	GYRO SHOT
149	255.3	-43.17	GYRO SHOT
164	256.84	-42.5	GYRO SHOT
179	257.62	-42.1	GYRO SHOT
194	258.92	-41.69	GYRO SHOT
209	258.88	-41.54	GYRO SHOT
224	261.46	-41.47	GYRO SHOT
236	263.1	-41.22	GYRO SHOT



18-KAZ-059

Depth	Assay				MAJOR UNIT						MINOR UNIT		ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E964056	39.9	40.8	0.088																		
	E964057	40.8	41.6	0.008	39.9	42.2	2	GG	FOL	Fg grey-green and black mod foliated mafic volcanics. Non-magnetic. Mod wispy to patchy bt alteration. Strong/intense pervasive bt alteration in a HZ from 39.9-37.4m. 1-3% planar white Qz veins.												
	E964058	41.6	42.2	0.014																		
	E964059	42.2	42.7	0.052	42.2	42.7	<del>6N</del>	BK	FOL		Fg black, strongly foliated argillaceous mudstone. Weakly magnetic. Entire unit is highly strained, with ~7% thin, often discontinuous/lenticular Qz veins. 10% netted po threads.											
	E964061	42.7	43.6	0.009																		
	E964062	43.6	44.5	0.015																		
	E964063	44.5	45.4	0.011																		
	E964064	45.4	45.8	0.021																		
	E964065	45.8	46.8	0.02																		
	E964066	46.8	47.8	0.009																		
	E964067	47.8	48.8	0.005																		
	E964068	48.8	49.8	0.009	42.7	55.4	2	GG	FOL	Fg green-grey, weak-mod foliated mafic volcanics. Non-magnetic. Weak patchy bt alteration locally. 3-5% wispy carb stringers. 0.25% wispy po + 0.25% wispy/diss py.												
	E964069	49.8	50.5	0.007																		
	E964071	50.5	51.2	0.008																		
	E964072	51.2	51.7	0.007																		
	E964073	51.7	52.7	0.006																		
	E964074	52.7	53.7	0.005																		
	E964075	53.7	54.6	0.007																		
	E964076	54.6	55.4	0.007																		
	E964077	55.4	56.2	0.016	55.4	56.2	1	G	MA		Mg grey, massive ultramafic. Non-magnetic. Highly irregular contacts, suggest unit may possibly be intrusive. Mod-strong pervasive grey (serp-talc) alteration. 1% wispy po.											
	E964078	56.2	56.5	0.016	56.2	56.8	<del>6N</del>	BK	FOL			Fg black, strongly foliated argillaceous mudstone. Weakly magnetic. Entire unit is highly strained. 3-5% wispy po.										
	E964079	56.5	56.8	0.028																		
	E964081	56.8	57.6	0.011																		
	E964082	57.6	58.4	0.026																		
	E964083	58.4	59.2	0.005																		
	E964084	59.2	60	0.029																		
	E964085	60	61	0.01																		
	E964086	61	62	0.016																		
	E964087	62	63	0.007																		
	E964088	63	64	0.005																		
	E964089	64	65	0.012																		
	E964091	65	66	0.005																		
	E964092	66	67	0.005																		
	E964093	67	68	0.009																		
	E964094	68	69	0.005	56.8	101.5	2	GG	FOL	Fg green-grey, mod foliated mafic volcanics. Non-magnetic. Weak patchy, locally banded chl alteration. Mod banded bt alteration in localized narrow, weak high strain zones. 1-3% Qz-carb veins locally. 10cm wide 6N interval from 85.9-86m.	Trace wispy po locally.											
	E964095	69	70	0.005																		
	E964096	70	71	0.005																		
	E964097	71	72	0.005																		
	E964098	72	73	0.005																		
	E964099	73	73.8	0.005																		
	E964101	73.8	74.7	0.005																		
	E964102	74.7	75.6	0.005																		
	E964103	75.6	76.5	0.005																		
	E964104	76.5	77.4	0.005																		
	E964105	77.4	78.3	0.02																		
	E964106	78.3	79.2	0.02																		
	E964107	79.2	79.9	0.005																		
	E964108	79.9	80.6	0.005																		





























# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-060**

Project: **KAZ**

Mine Grid Easting: 11160.6772

Planned Depth(m): 51

Drill Start Date: 9/10/2018

Mine Grid Northing: 1205.4671

Actual Depth (m): 62

Drill End Date: 9/11/2018

Elevation: 5318.8088

Core Diameter: NQ2

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: Conditional hole based on results - confirm move with Geologist

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -65 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.089	-64.577	GYRO SHOT
29	250.03	-63.81	GYRO SHOT
44	252.94	-63.52	GYRO SHOT
59	250.1	-63.42	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-061**

Project: **KAZ**

Mine Grid Easting: 11159.8955

Planned Depth(m): 52

Drill Start Date: 9/12/2018

Mine Grid Northing: 1205.0416

Actual Depth (m): 53

Drill End Date: 9/13/2018

Elevation: 5318.7911

Core Diameter: NQ2

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: Conditional hole based on results - confirm move with Geologist

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -45 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.105	-45.088	GYRO SHOT
14	256.07	-44.14	GYRO SHOT
29	249.97	-42.8	GYRO SHOT
44	250.75	-42.51	GYRO SHOT
53	251.57	-42.36	GYRO SHOT





18-KAZ-061

Depth	MAJOR UNIT			MINERALS							QTZ VEINING							FABRIC					FOLD					FAULT										
	From	To	Unit	As%	Cp%	Mt%	Po%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Tex	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments		
0	0.8																																					
0.8	7.8	SING 2																	2.2	2.3	50	MOD	S1															
7.8	8.6	4A																																				
8.6	9.6	4B																																				
9.6	10	2																																				
10	11.4	4B																	10.5	10.6	55	MOD	S0															
11.4	11.8	4H																																				
11.8	12.3	2																																				
12.3	13.3	4A																																				
13.3	13.9	4H																																				
13.9	14.9	4B																																				
14.9	15.9	2																																				
15.9	22	4B																																				
16.1	16.9																																					
17.4	17.6																																					
17.4	18.7																																					
18.3	18.7																																					
18.7	21.5																																					
18.7	18.7																																					
18.7	21.5																																					
22	27.6	1																																				
22.2	22.3																																					
27.6	30	2																																				
29.9	30																																					
30	31.4	4B																																				
30.7	31.4																																					
31.4	35.9	4A																																				
31.4	35.9																																					
32.8	32.9																																					
34.8	34.9																																					
34.8	34.9																																					
37.3	37.4																																					
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# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-063**

Project: **KAZ**

Mine Grid Easting: 11186.0489

Planned Depth(m): 59

Drill Start Date: 9/13/2018

Mine Grid Northing: 1185.6492

Actual Depth (m): 59

Drill End Date: 9/16/2018

Elevation: 5318.401

Core Diameter: NQ2

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.951	-50.11	GYRO SHOT
14	250.62	-49.51	GYRO SHOT
29	250.73	-49.04	GYRO SHOT
44	249.99	-48.87	GYRO SHOT
59	249.22	-48.43	GYRO SHOT











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-064**

Project: **KAZ**

Mine Grid Easting: 11162.5688

Planned Depth(m): 31

Drill Start Date: 9/17/2018

Mine Grid Northing: 1177.5574

Actual Depth (m): 32

Drill End Date: 9/17/2018

Elevation: 5319.366

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test: NO

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.441	-50.029	GYRO SHOT
14	249.55	-49.23	GYRO SHOT
29	250.28	-48.81	GYRO SHOT





# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-066**

Project: **KAZ**

Mine Grid Easting: 11173.919

Planned Depth(m): 175

Drill Start Date: 9/18/2018

Mine Grid Northing: 1130.164

Actual Depth (m): 113

Drill End Date: 12/20/2018

Elevation: 5319.21

Core Diameter: NQ2

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions: geocall

To be drilled by Boart Longyear at an Azimuth of 203.8 degrees (True North) and a dip of -49 degrees

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	247.066	-49.552	GYRO SHOT
14	247.72	-48.68	GYRO SHOT
29	247.59	-48.13	GYRO SHOT
44	244.36	-47.23	GYRO SHOT
59	246.69	-46.76	GYRO SHOT
74	248.34	-46.15	GYRO SHOT
89	247.06	-45.53	GYRO SHOT
104	250.15	-45.43	GYRO SHOT



18-KAZ-066

Depth	Assay				MAJOR UNIT						MINOR UNIT		ALTERATION								
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments
	E958537	39.8	40.3	0.037	22.8	89	2	GG	FOL	Grey-green, fg mafic metavolcanic (2) non-magnetic, strongly foliated, intercalated 10cm 4A at 23.4m with 0.5% Po wisps. Strain and shear intensities vary throughout the with most intense intervals having intense Bt and Cb alt and moderate	intensity showing a more banded appearance with planar Cb veins. 1-2% Po associated with shearing or as fracture fills in areas with distorted Cb stringers. sharp irregular LC to a 6N.										
	E958538	40.3	41	0.005																	
	E958539	41	42	0.005																	
	E958541	42	43	0.011																	
	E958542	43	44	0.005																	
45	E958543	44	45	0.056																	
	E958544	45	46	0.323																	
	E958545	46	47	0.005																	
	E958546	47	48	0.006																	
	E958547	48	49	0.007																	
	E958548	49	50	0.005																	
50	E958549	50	51	0.005																	
	E958551	51	52	0.005																	
	E958552	52	53	0.005																	
	E958553	53	54	0.005																	
	E958554	54	55	0.005																	
55	E958555	55	56	0.009																	
	E958556	56	57	0.005																	
	E958557	57	58	0.005																	
	E958558	58	59	0.005																	
	E958559	59	60	0.005																	
60	E958561	60	61	0.005																	
	E958562	61	62	0.005																	
	E958563	62	63	0.005																	
	E958564	63	64	0.005																	
	E958565	64	65	0.005																	
65	E958566	65	65.4	0.011																	
	E958567	65.4	66.3	0.005																	
	E958568	66.3	67.2	0.005																	
	E958569	67.2	68.2	0.005																	
	E958571	68.2	69.2	0.005																	
	E958572	69.2	70.2	0.005																	
70	E958573	70.2	71.2	0.005																	
	E958574	71.2	72.2	0.005																	
	E958575	72.2	73.2	0.005																	
	E958576	73.2	74.2	0.005																	
	E958577	74.2	75.2	0.005																	
75	E958578	75.2	76.2	0.005																	
	E958579	76.2	77.2	0.005																	
	E958581	77.2	78.2	0.005																	
	E958582	78.2	79.2	0.005																	
	E958583	79.2	80.2	0.005																	











# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-090**

Project: **KAZ**

Mine Grid Easting: 11100.314

Planned Depth(m): 51

Drill Start Date: 8/27/2018

Mine Grid Northing: 1457.414

Actual Depth (m): 52

Drill End Date: 8/27/2018

Elevation: 5314.613

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments: Hole was re-drilling 18-KAZ-034 due to core loss during slinging with helicopter  
 Logged by Musselwhite Exploration Geologists Andrew Stone, P.Geo, and Michael D'Angelo

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.251	-64.105	SURV
16	248.68	-62.99	GYRO SHOT
40	247.72	-62.64	GYRO SHOT
52	249.56	-62.25	GYRO SHOT

18-KAZ-090

Depth	Assay				MAJOR UNIT					MINOR UNIT			ALTERATION										
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments		
	E882842	0.2	1	0.054	0	0.2	MIS SIN G																
	E882843	1	1.7	0.005																			
	E882844	1.7	2.5	0.006																			
	E882845	2.5	3.3	0.13																			
	E882846	3.3	3.8	4.68																			
	E882847	3.8	4.7	0.037																			
5	E882848	4.7	5.6	0.017																			
	E882849	5.6	6.5	6.44																			
	E882851	6.5	7.4	0.076																			
	E882852	7.4	8.3	0.041																			
	E882853	8.3	9.2	0.079																			
	E882854	9.2	10.1	0.01																			
10	E882855	10.1	11	0.029																			
	E882856	11	12	0.006																			
	E882857	12	12.3	0.106																			
	E882858	12.3	13	34.8																			
	E882859	13	14	0.016																			
	E882861	14	14.8	0.23																			
15	E882862	14.8	15.6	0.032																			
	E882863	15.6	16.3	0.024																			
	E882864	16.3	17.1	0.006																			
	E882865	17.1	18.1	0.005																			
	E882866	18.1	19.1	0.005																			
	E882867	19.1	19.7	0.005																			
20	E882868	19.7	20.1	0.015	0.2																		
	E882869	20.1	21	0.005	47.1																		
	E882871	21	21.9	0.005																			
	E882872	21.9	22.8	0.005																			
	E882873	22.8	23.7	0.005																			
	E882874	23.7	24.6	0.005																			
25	E882875	24.6	25.6	0.005																			
	E882876	25.6	26.5	0.005																			
	E882877	26.5	27.4	0.005																			
	E882878	27.4	28.3	0.055																			
	E882879	28.3	29.2	0.012																			
30	E882881	29.2	30.1	0.005																			
	E882882	30.1	31	0.005																			
	E882883	31	32	0.005																			
	E882884	32	33	0.005																			
	E882885	33	33.7	0.005																			
	E882886	33.7	34.5	0.005																			
35	E882887	34.5	35.3	0.005																			
	E882888	35.3	36	0.006																			
	E882889	36	37	0.005																			
	E882891	37	38	0.005																			
	E882892	38	39	0.005																			
	E882893	39	40	0.016																			
	E882894	40	41	0.027																			

Weak patchy bt, with local areas of mod wispy, banded bt alteration. 1-3% Qz-carb stringers, with highest concentrations associated with banded bt alteration. Trace to 0.5% wispy po, 3% thready/wispy po associated with HZ/Qz veining from 43.2-44.8m

Fg grey/black, mod foliated mafic volcanics. Non-magnetic to weakly magnetic locally (po). Locally contains 2-3mm white carb/Qz 'nodules' elongated parallel to fabric, possibly strained vesicles?









# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-091**

Project: **KAZ**

Mine Grid Easting: 11092.735

Planned Depth(m): 30

Drill Start Date: 8/30/2018

Mine Grid Northing: 1453.735

Actual Depth (m): 32

Drill End Date: 9/1/2018

Elevation: 5315.211

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **SIF**

UTM North:

Grout Test:

Target 2:

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

Target 3:

Drill Instructions:

Collar Comments: Logged by Musselwhite Exploration Geologists Andrew Stone, P.Geo, and Michael D'Angelo

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.27	-48.14	SURV
18	248.13	-46.4	GYRO SHOT
32	249.5	-45.29	GYRO SHOT



18-KAZ-091

Depth	MAJOR UNIT			MINERALS							QTZ VEINING							FABRIC					FOLD					FAULT										
	From	To	Unit	As%	Cp%	Mt%	Po%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Tex	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments		
0	1.4	1CA SIN G																																				
1.4	13.6	2																																				
13.6	14.4	4B				4																																
14.4	15.6	4H				7																																
15.6	18.5	4B				30																																
18.5	18.9	2				5																																
18.9	19.7	4H				40																																
19.7	21.4	4B				4																																
21.4	23.1	2				2																																
23.1	27.3	4B				3																																
27.3	31.1	4A				4																																
31.1	32	2				6																																
						3																																
						7																																
						0.2																																
						5																																

PO hosted in 6N likely will not have grade

# MUSSELWHITE MINE - GEOLOGY

Hole: **18-KAZ-092**

Project: **KAZ**

Mine Grid Easting: 11175.5529

Planned Depth(m): 50

Drill Start Date: 9/16/2018

Mine Grid Northing: 1181.7428

Actual Depth (m): 50

Drill End Date: 9/17/2018

Elevation: 5318.8363

Core Diameter: NQ

UTM East:

Plugged:

**Target 1: SIF**

UTM North:

Grout Test:

**Target 2:**

Datum: UTM NAD1983 Zone 15N

Result: NO RESULTS

**Target 3:**

Drill Instructions:

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	248.411	-50.46	GYRO SHOT
14	249.38	-49.93	GYRO SHOT
29	249.36	-49.81	GYRO SHOT
44	249.79	-49.67	GYRO SHOT

















# Appendix XII – Annotated DDH Cross Sections

Litho Code Index  
Annotated DDH cross sections

## Diamond Drill Hole Major Lithology Code Legend

1	Unsubdivided Ultramafic Intrusive Unit
2	Unsubdivided Mafic Metavolcanic Flow
6	Unsubdivided Clastic Metasedimentary Unit
2U	Garnetiferous Mafic Metavolcanic Unit
4A	Gruneritized and Silicified Chert-Magnetite Banded Iron Formation
4B	Chert-Magnetite Banded Iron Formation
4C	Chert
4H	Pyrrhotite Cemented Breccia
6N	Sulphidic Meta-Argillite/Mudstone
8B	Granite
QTZ VN	Massive Quartz Vein
CARB Vein	Massive Carbonate Vein

0.0M 25.0M 50.0M

75.0M

75.0M

50.0M

50.0M

25.0M

25.0M

0.0M

25.0M

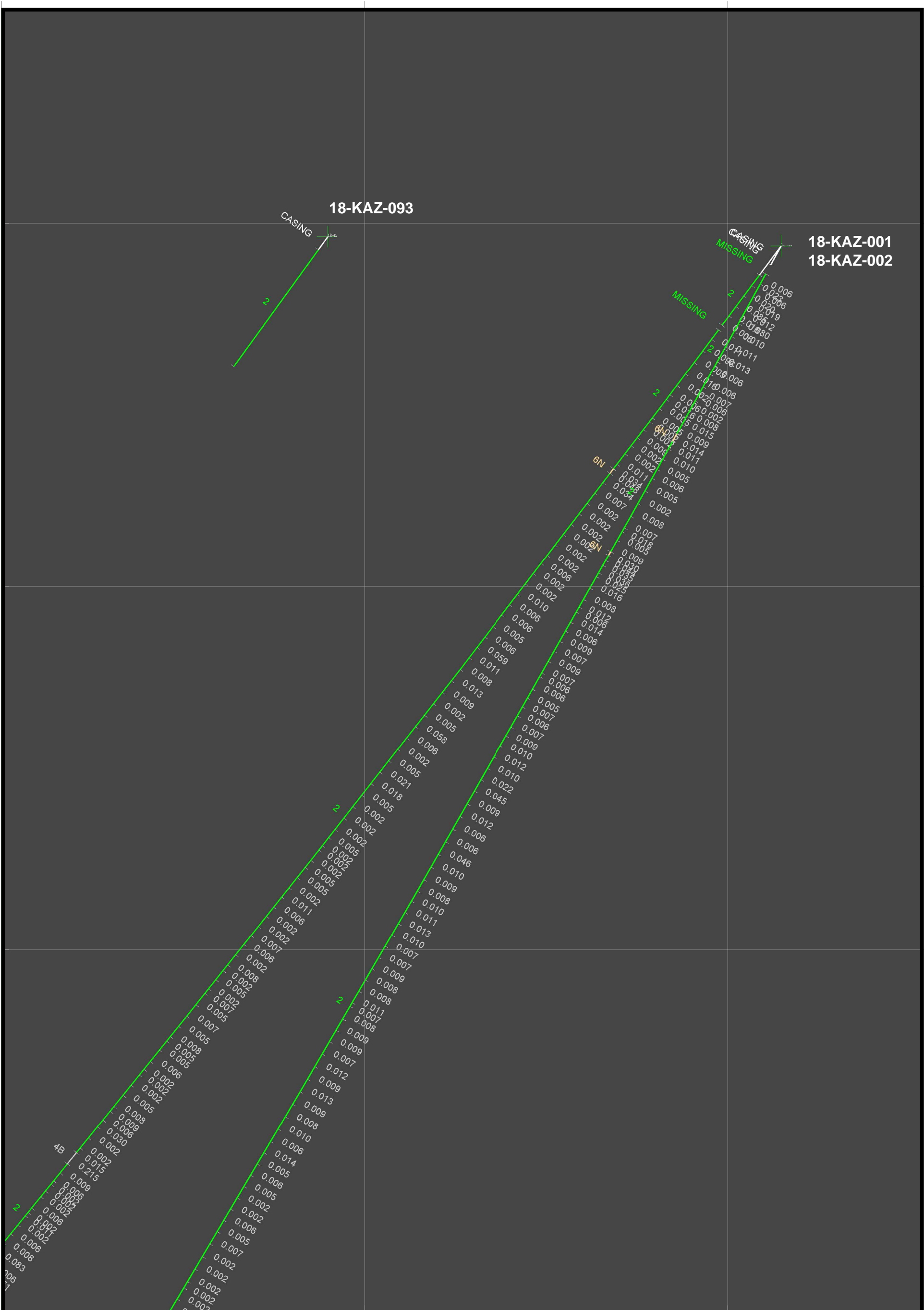
### 18-KAZ-001,002,093

Goldcorp Canada Ltd.

Musselwhite Mine

Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.
1 of 2



0.0M

25.0M

50.0M

75.0M

75.0M

50.0M

50.0M

25.0M

25.0M

18-KAZ-002

18-KAZ-001

0.0M

25.0M

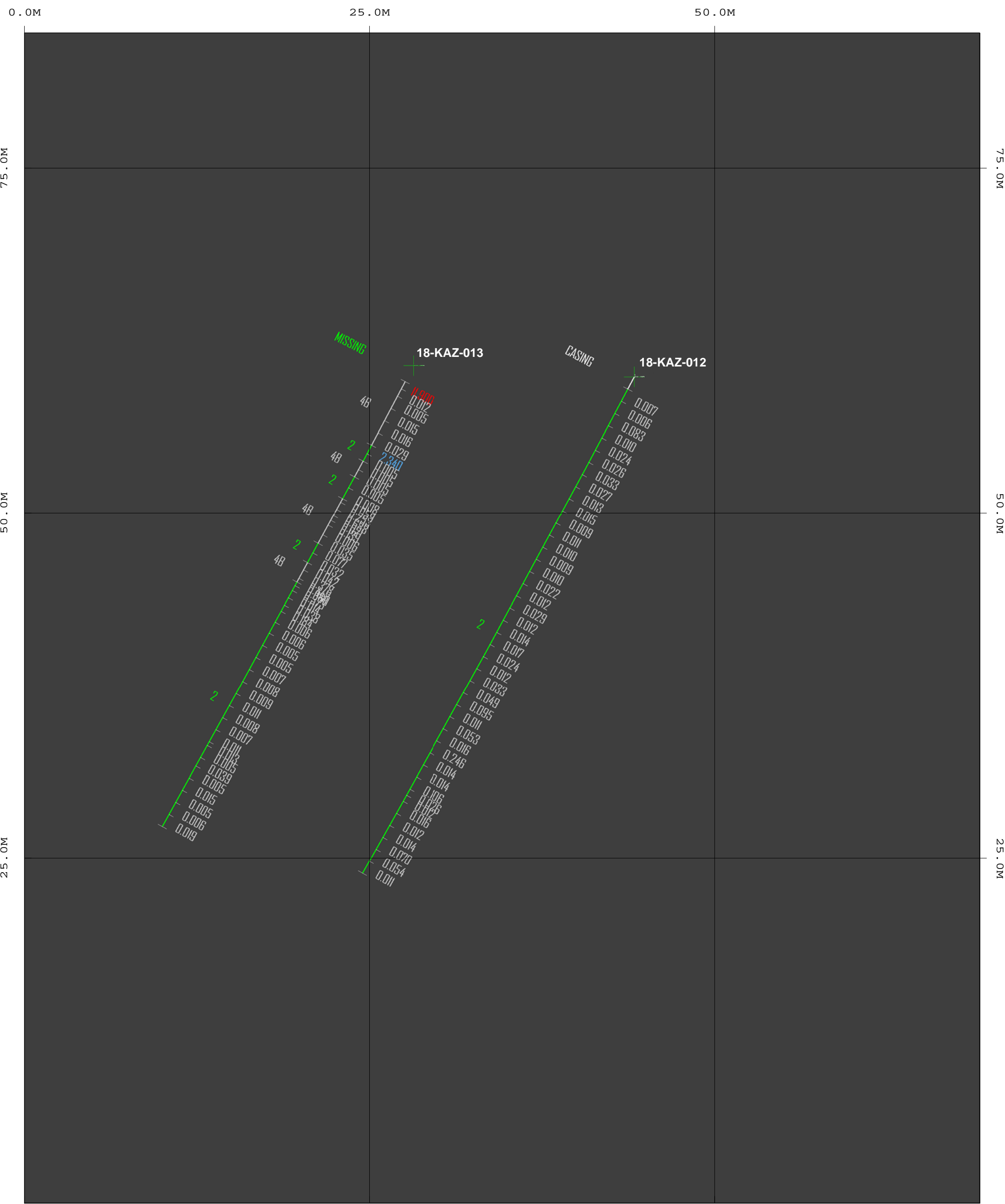
18-KAZ-001, 002, 093

Goldcorp Canada Ltd.  
Musselwhite Mine  
Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 2

MAPTRON Virar





0.0M 25.0M 50.0M

### 18-KAZ-012, 013

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:



0.0M

25.0M

50.0M

75.0M

75.0M

50.0M

50.0M

25.0M

25.0M

0.0M

25.0M

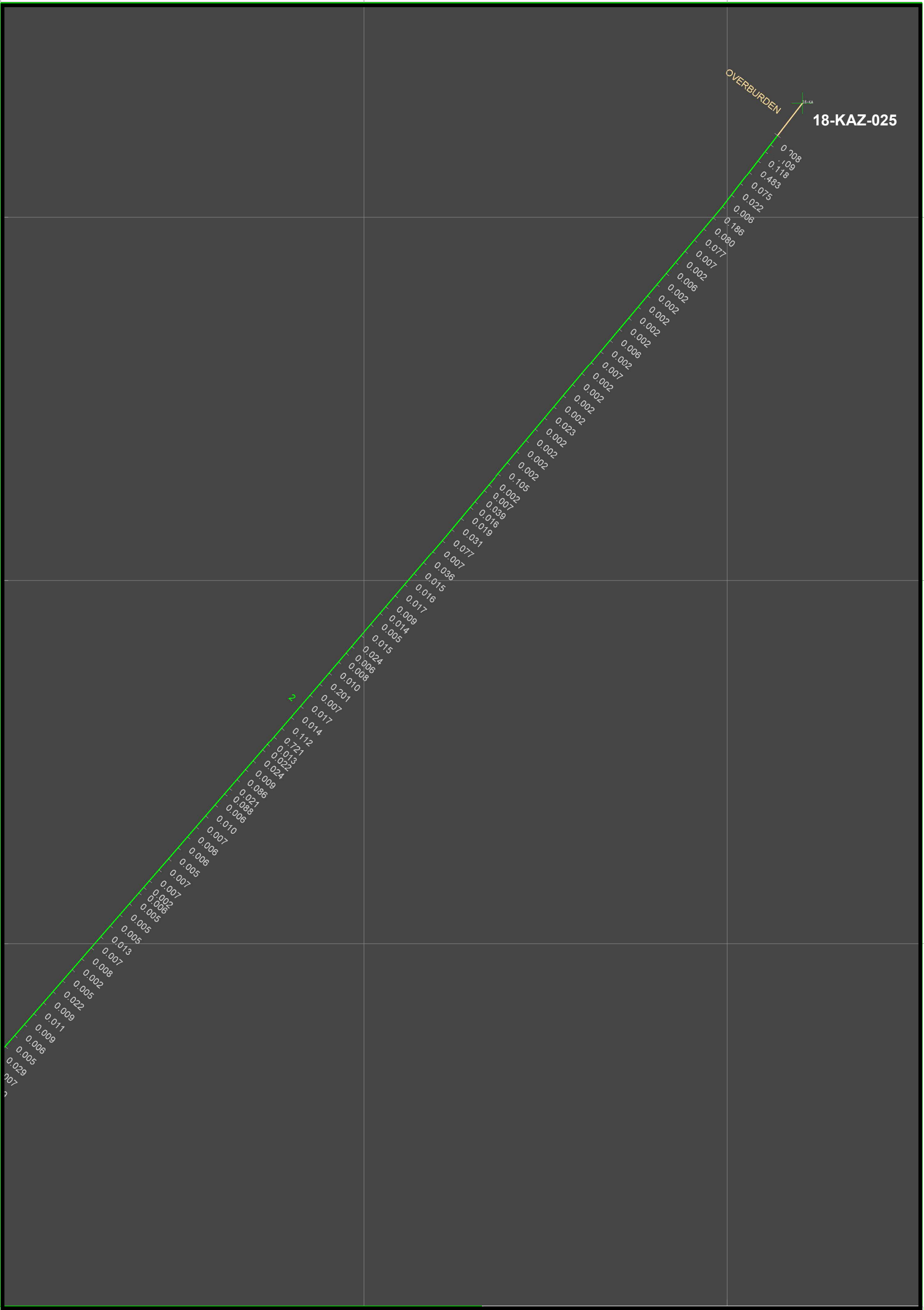
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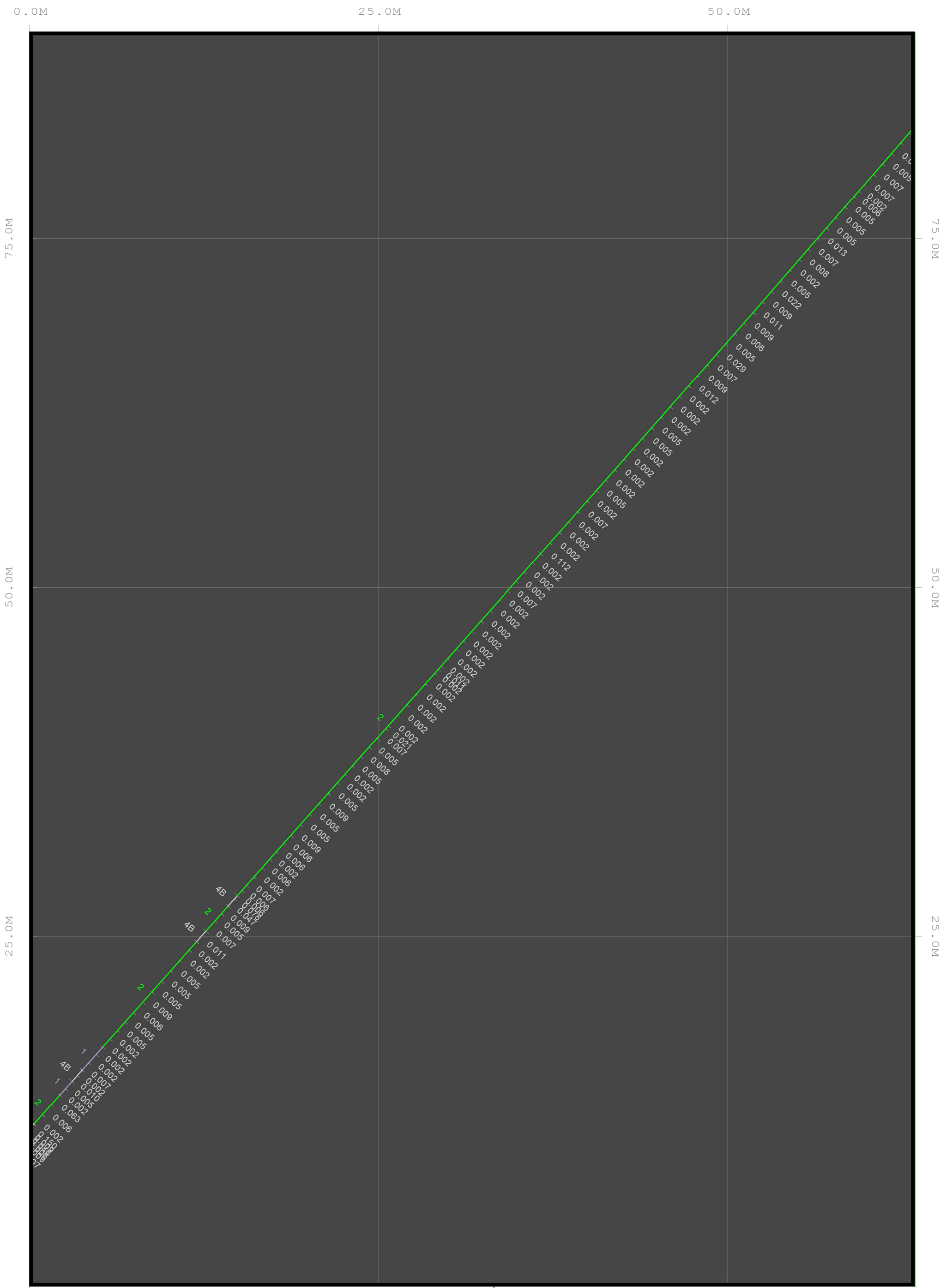
Goldcorp Canada Ltd.

Musselwhite Mine

Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.
1 of 3





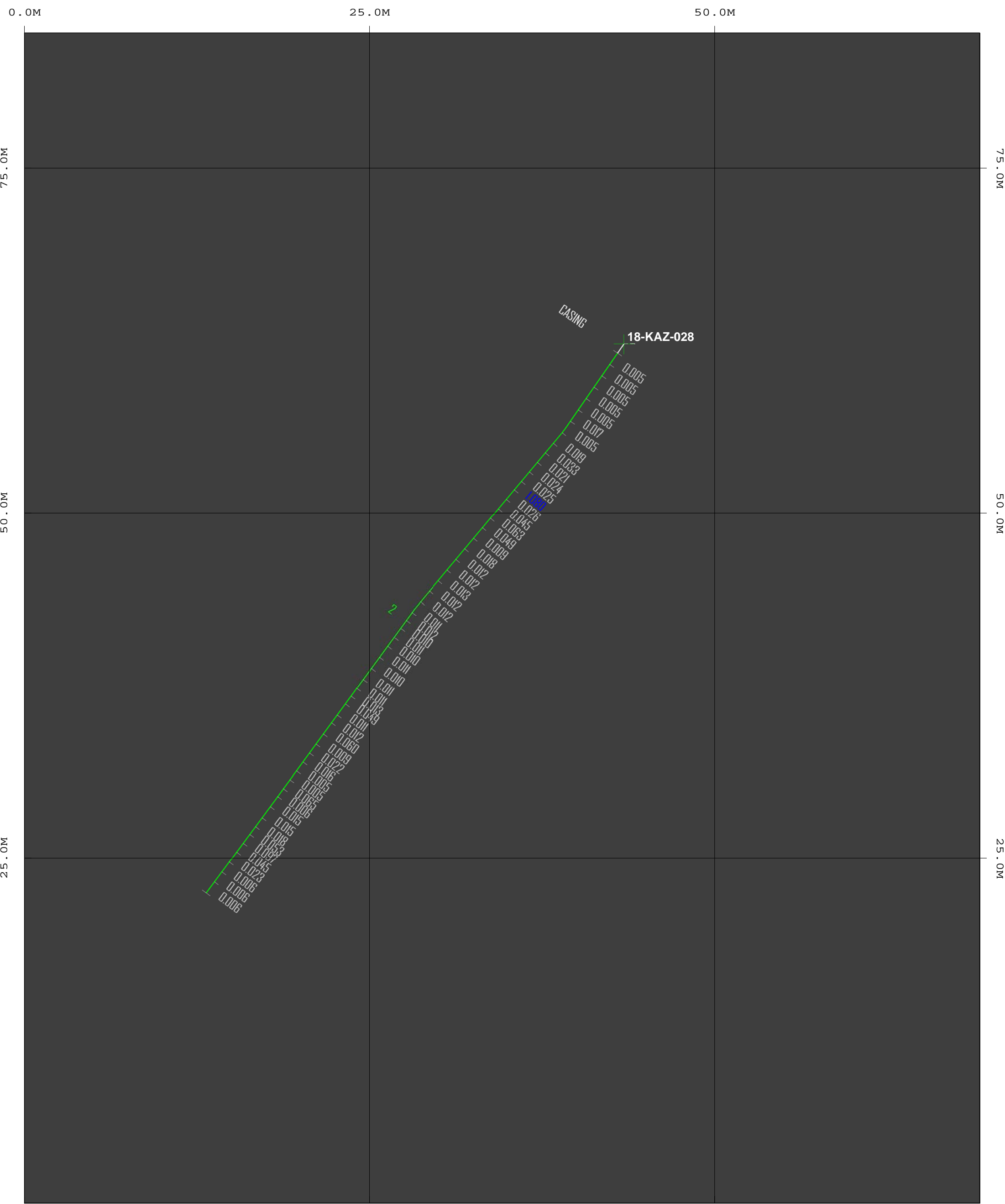
18-KAZ-025

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale:1:250
Date:24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 3





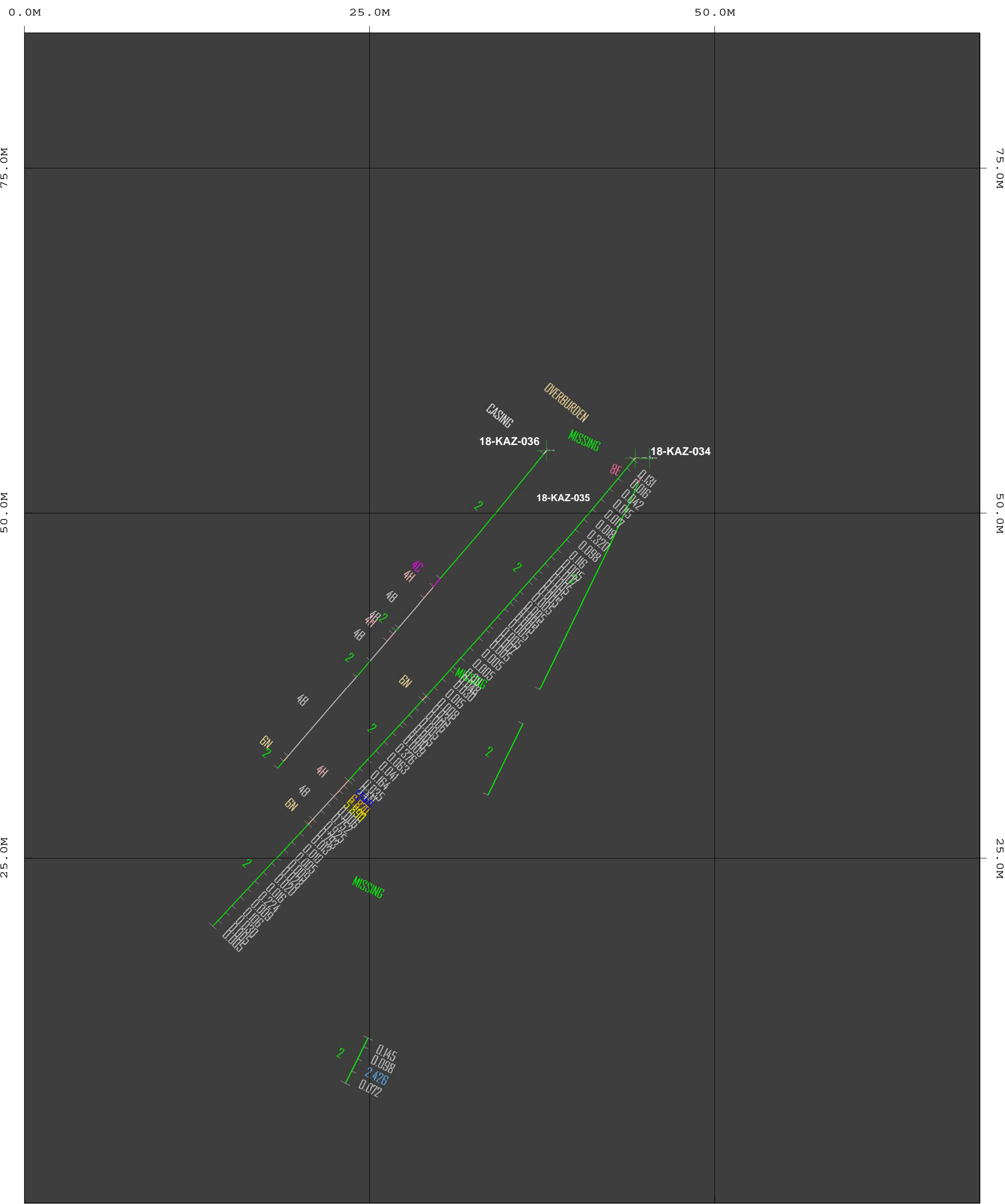


## 18-KAZ-028

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.

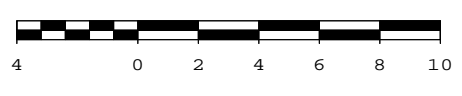


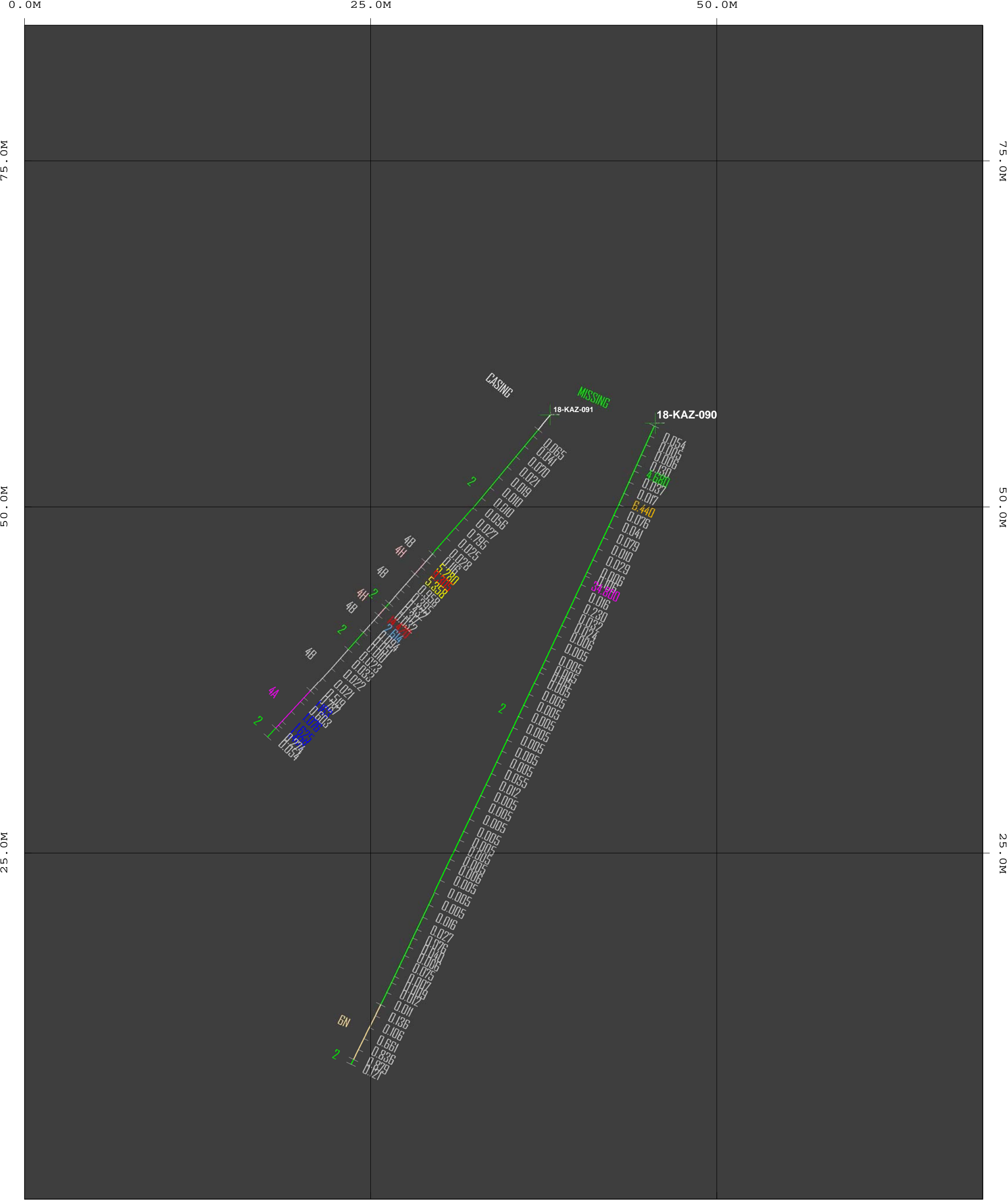


## 18-KAZ-034, 035, 036

Goldcorp Canada Ltd.  
Musselwhite Mine  
Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.





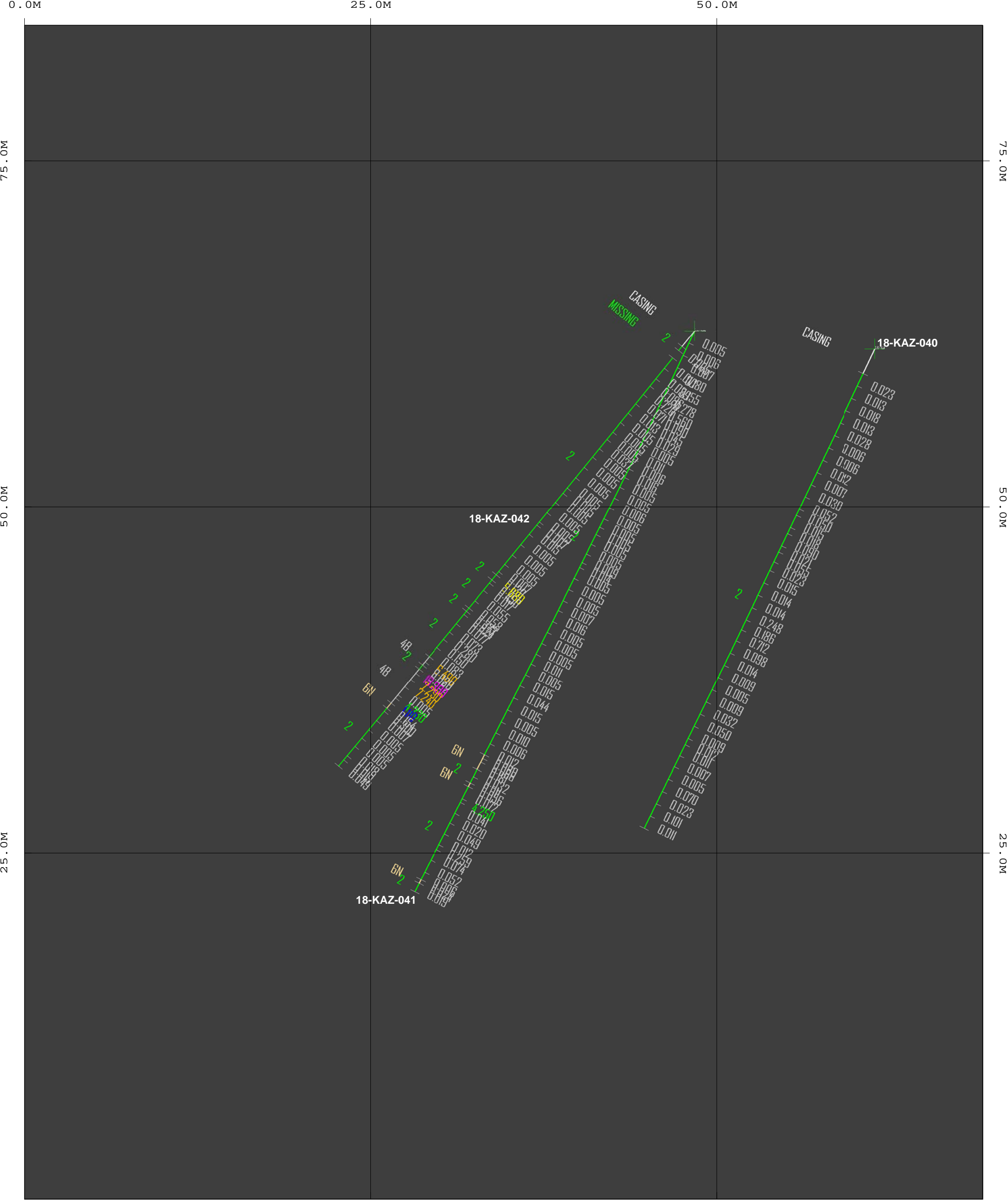
18-KAZ-090,091

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:







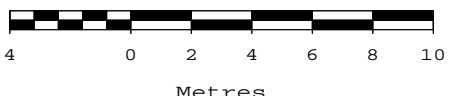
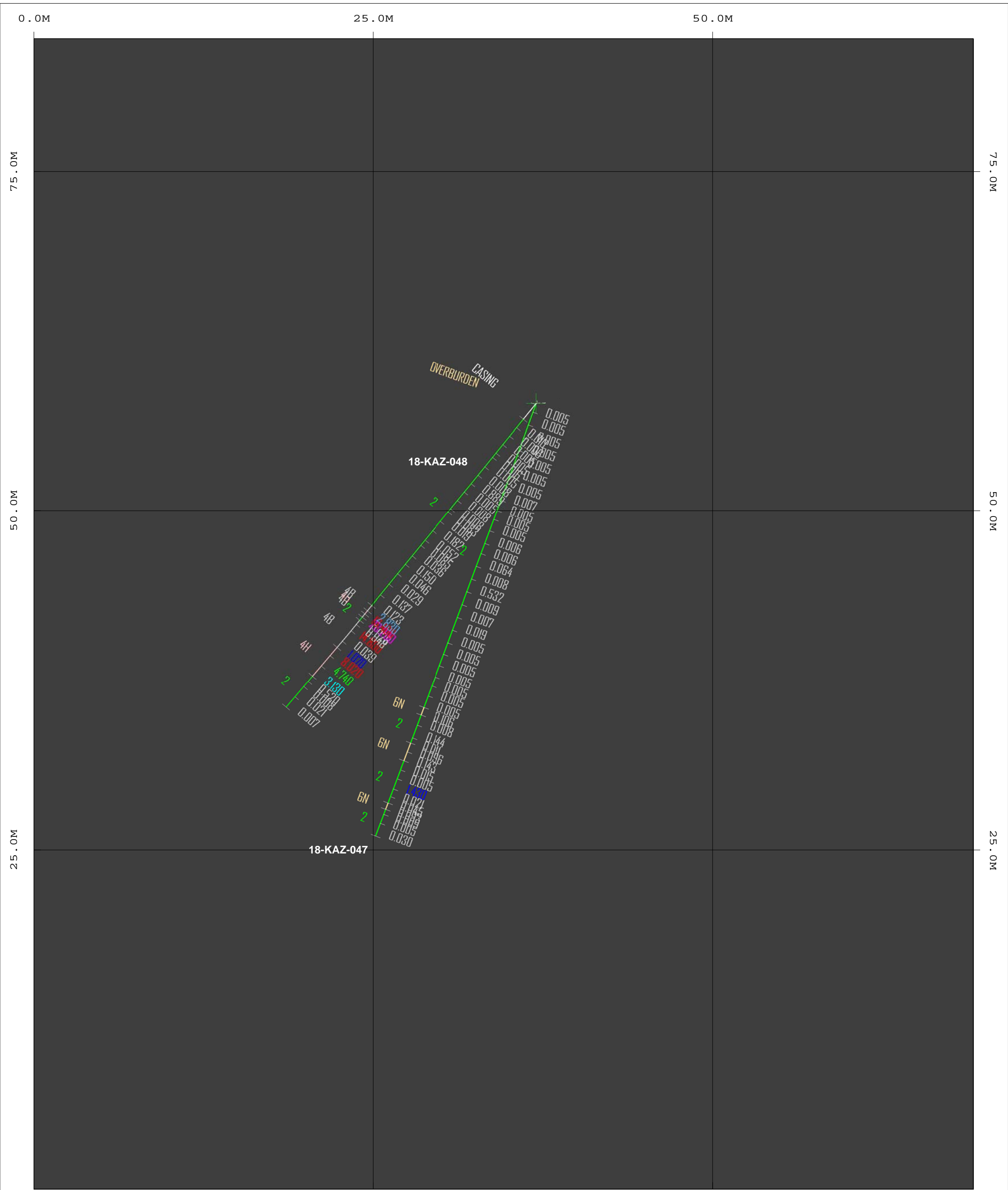
18-KAZ-040,041,042

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:





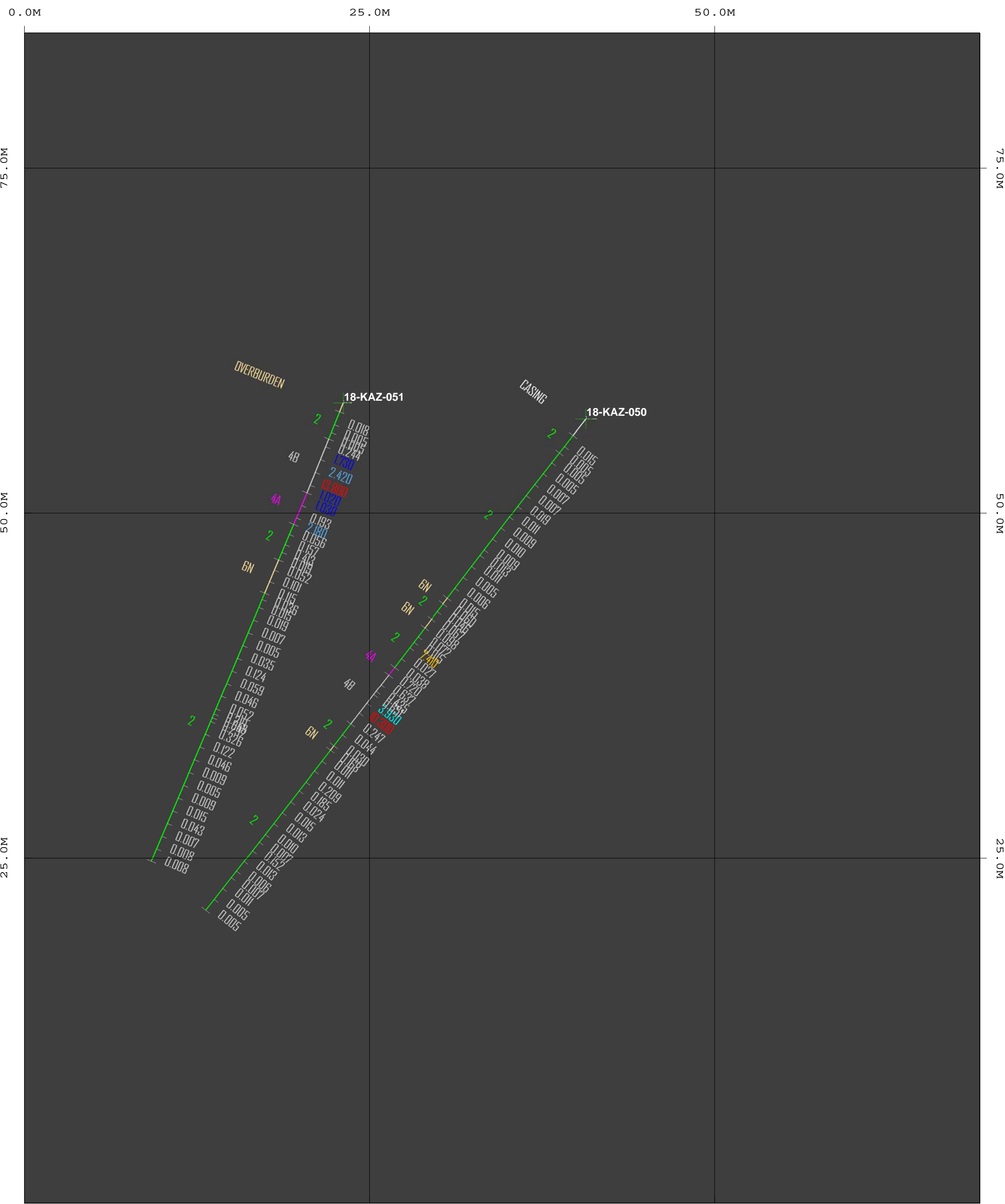


18-KAZ-047,048

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.





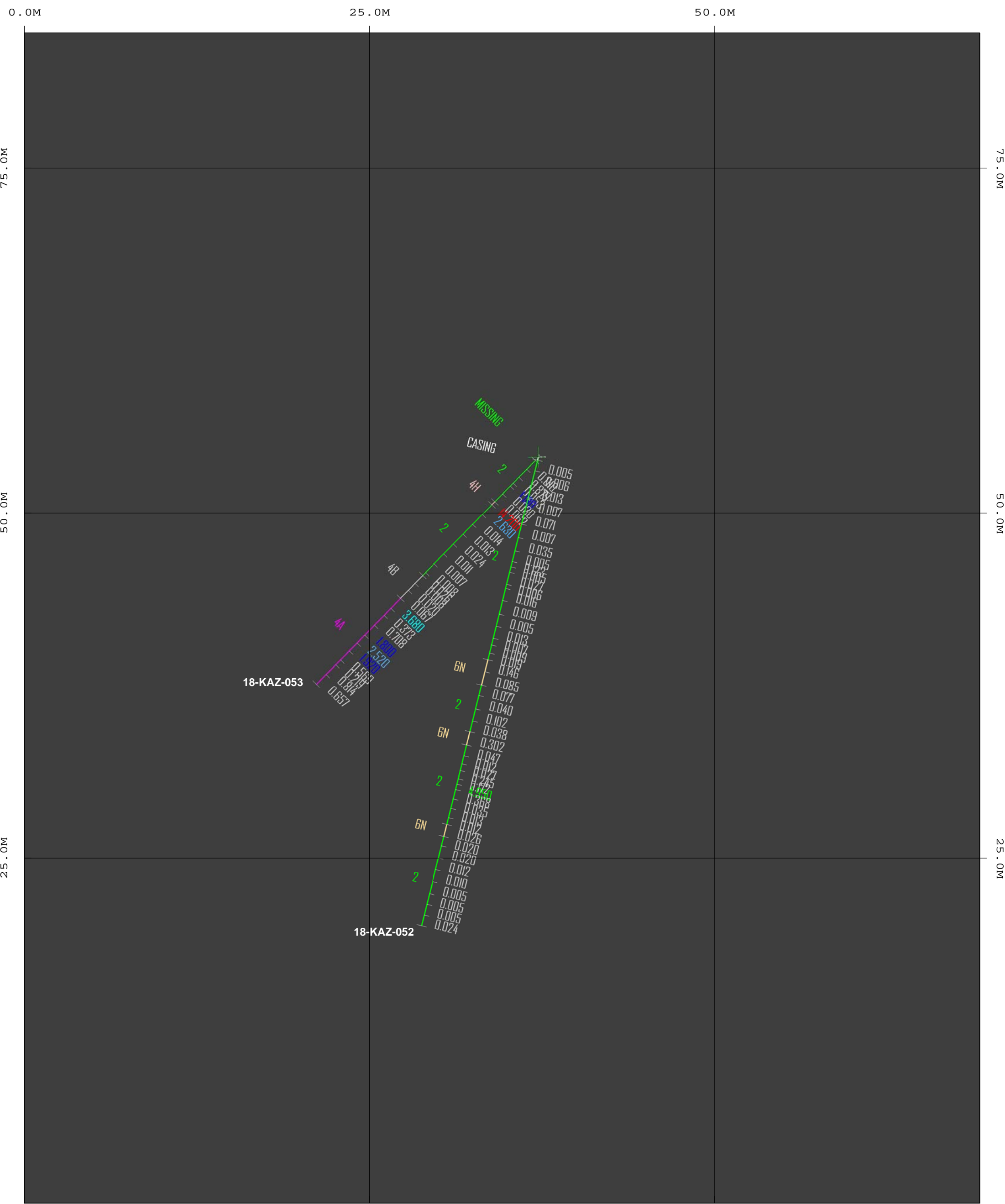
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### 18-KAZ-050,051

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:





0.0M 25.0M 50.0M

### 18-KAZ-052,053

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:



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25.0M

50.0M

75.0M

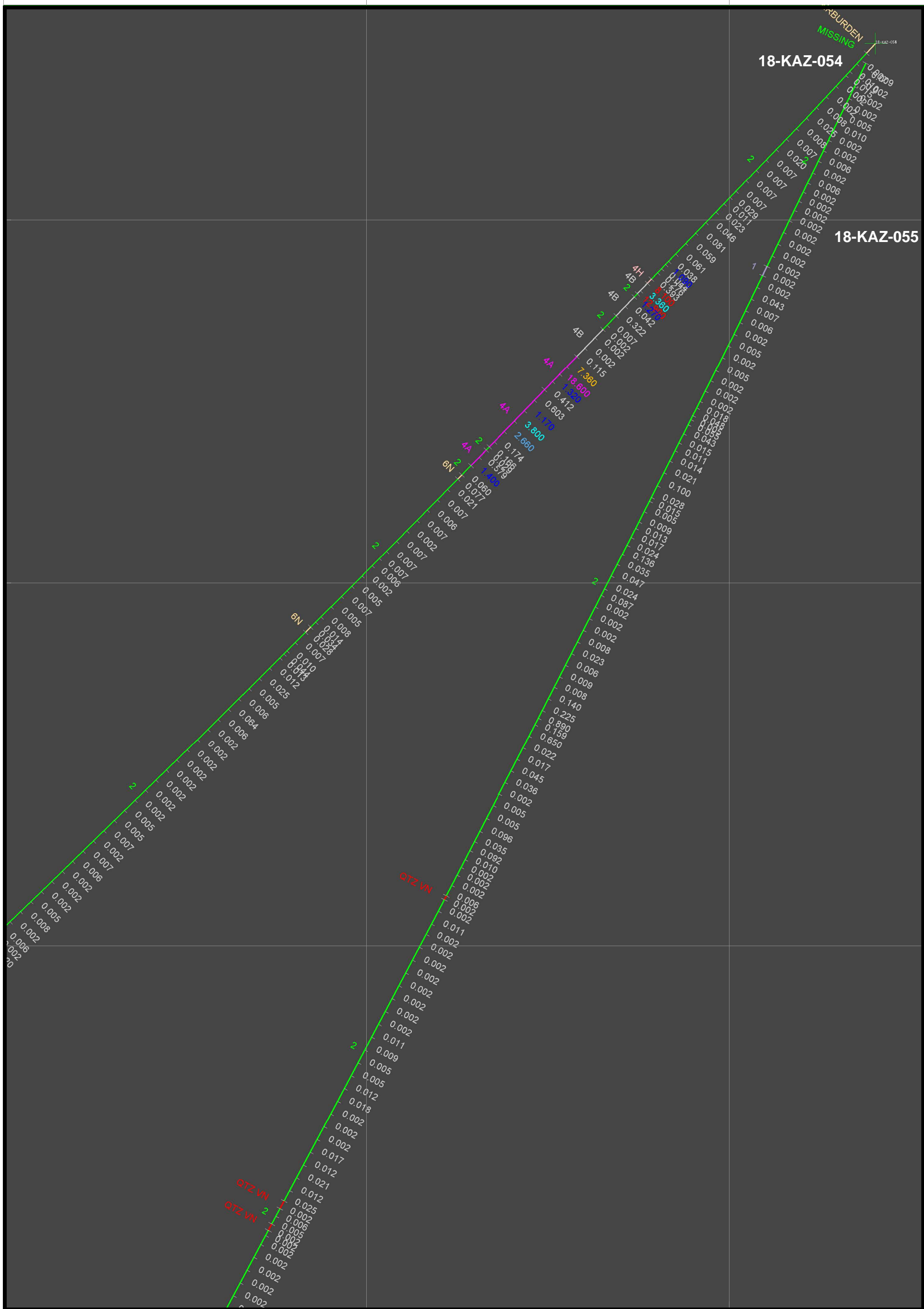
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75.0M

50.0M

25.0M



0.0M

25.0M

### 18-KAZ-054, 055

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 1 of 4

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75.0M

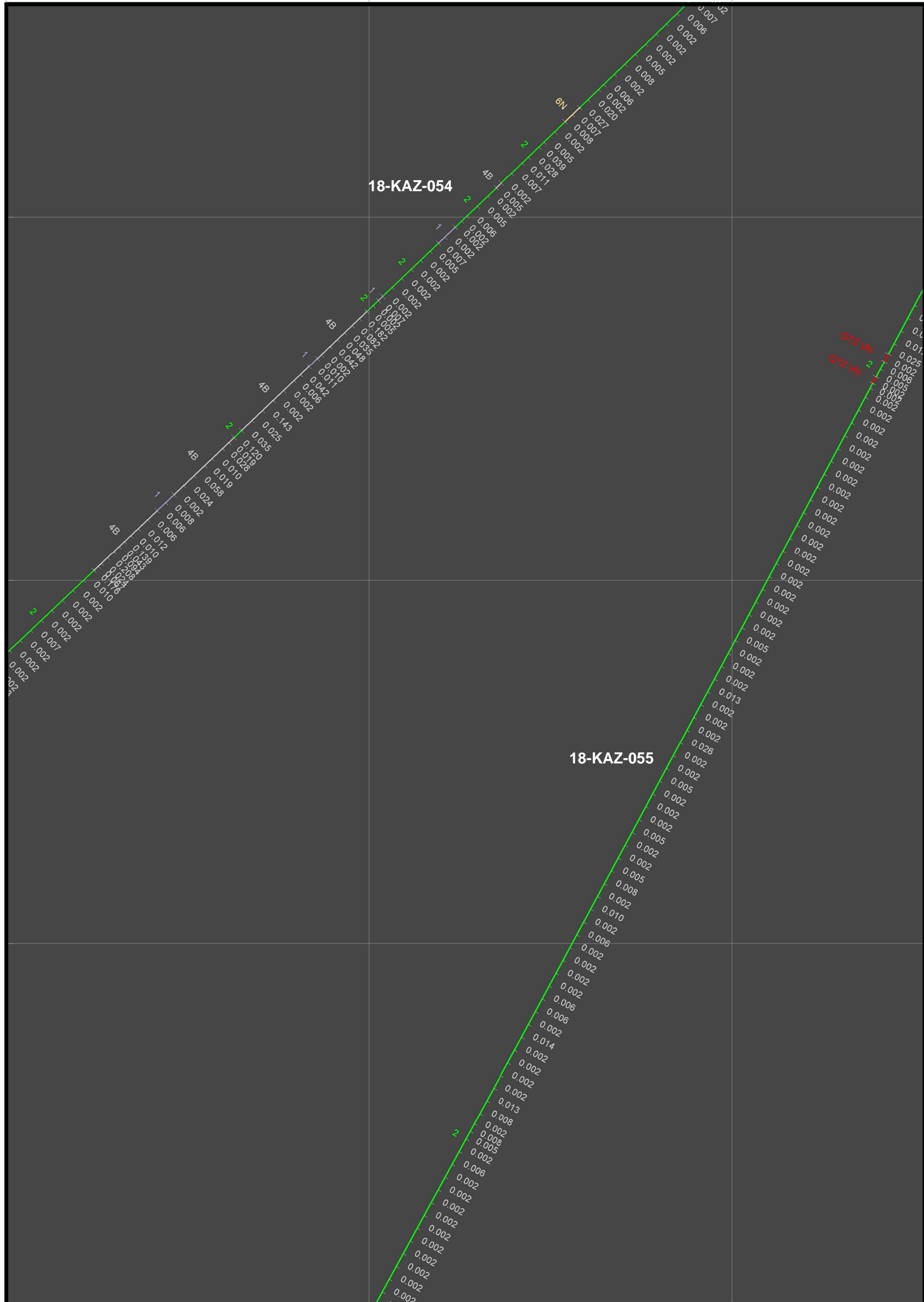
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50.0M

25.0M

25.0M



0.0M 25.0M

### 18-KAZ-054, 055

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 4







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50.0M

75.0M

75.0M

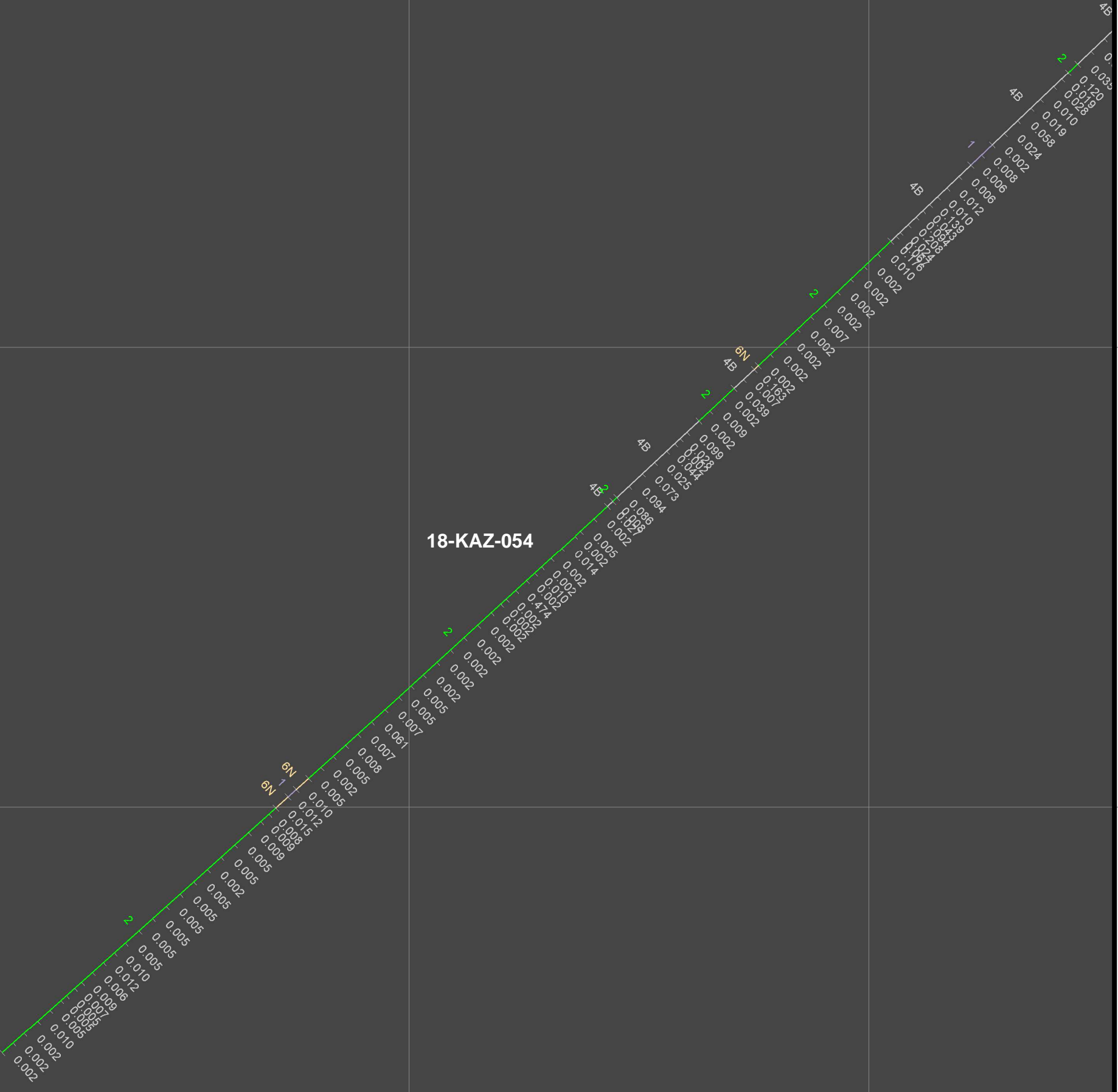
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18-KAZ-054



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18-KAZ-054,055

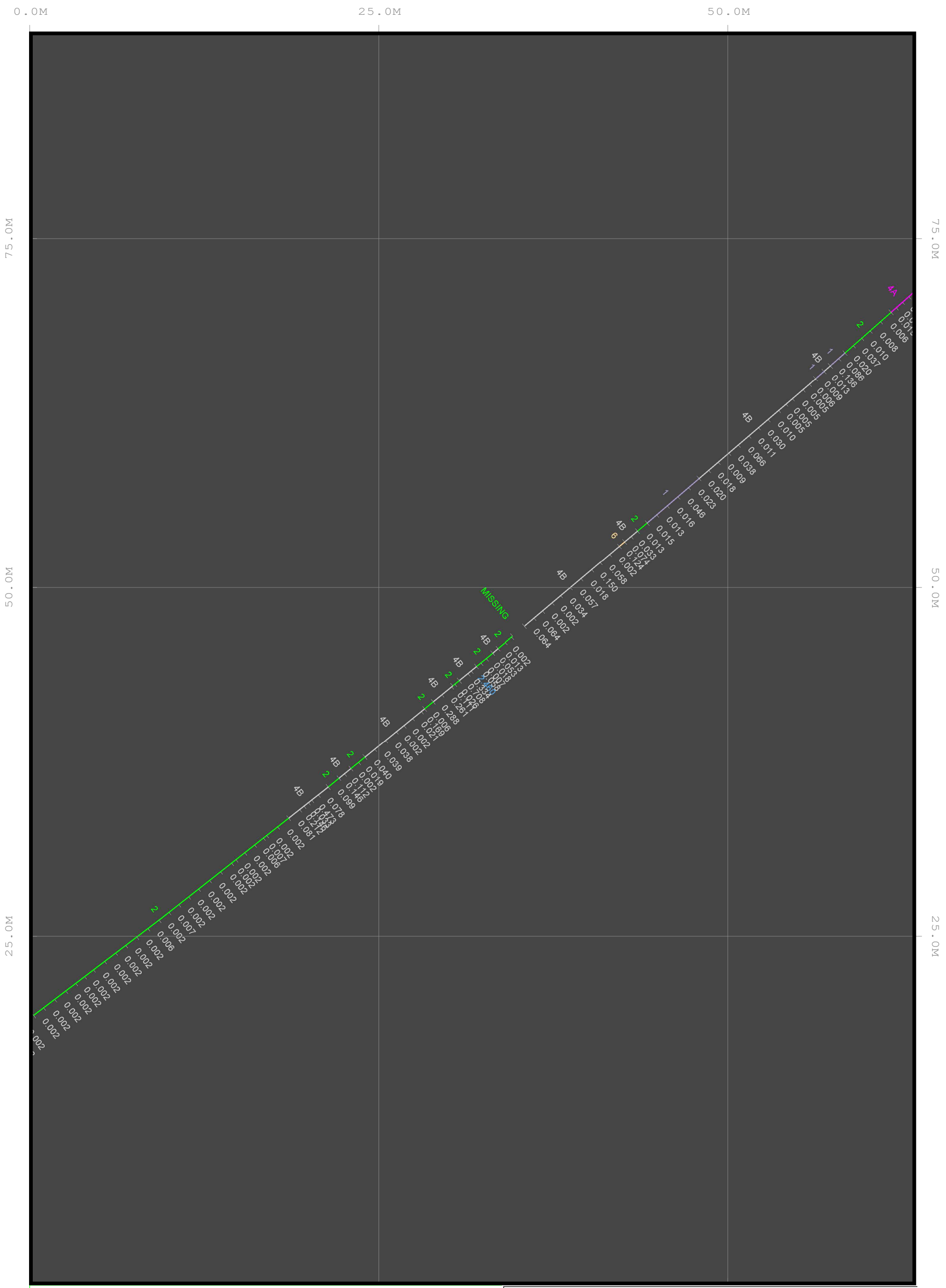
Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale:1:250
Date:24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 4 of 4









18-KAZ-056

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale:1:250
Date:24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 3



0.0M

25.0M

50.0M

75.0M

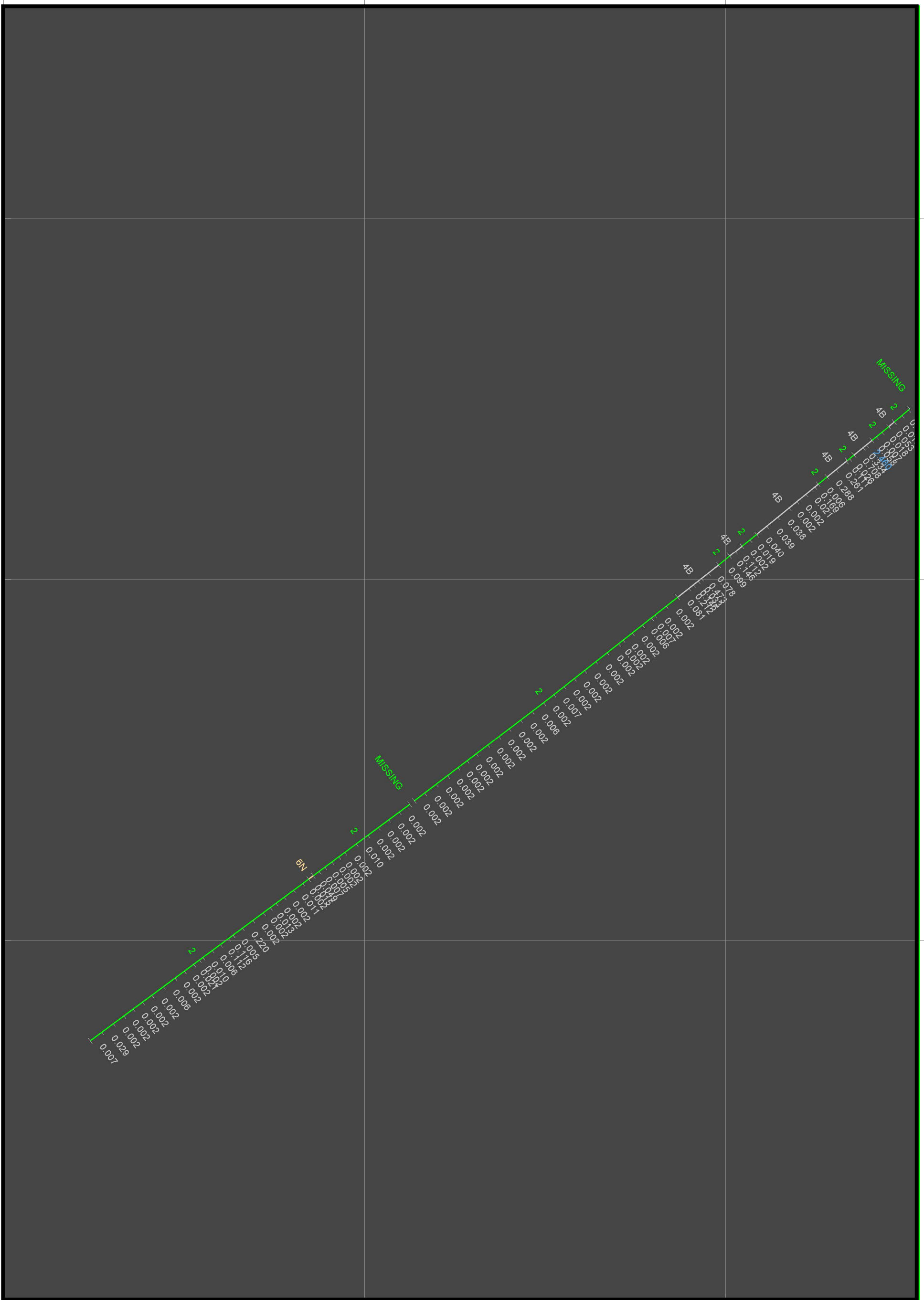
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50.0M

25.0M

25.0M



0.0M

25.0M

### 18-KAZ-056

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 3 of 3





0.0M

25.0M

50.0M

75.0M

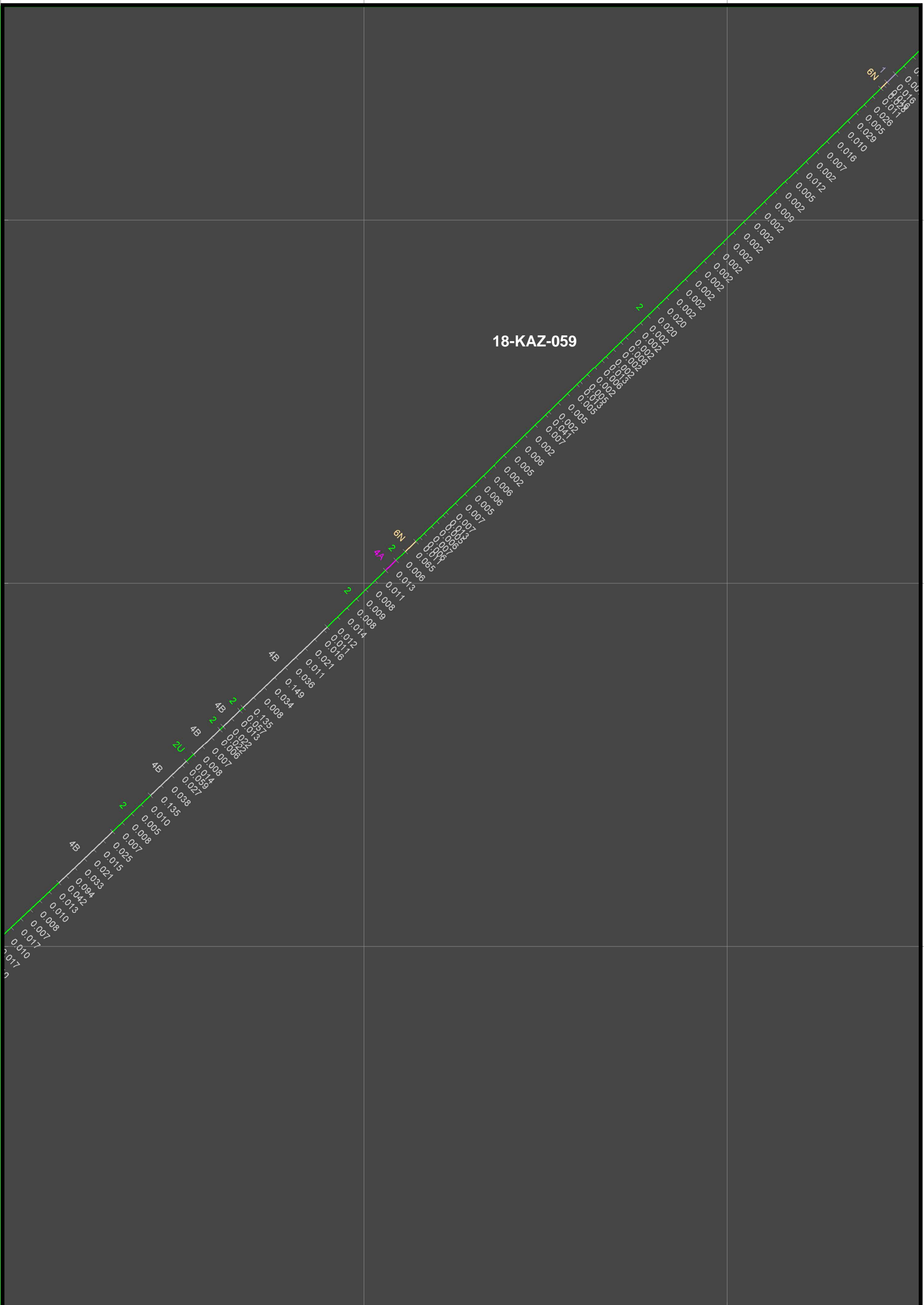
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50.0M

25.0M

25.0M



18-KAZ-059

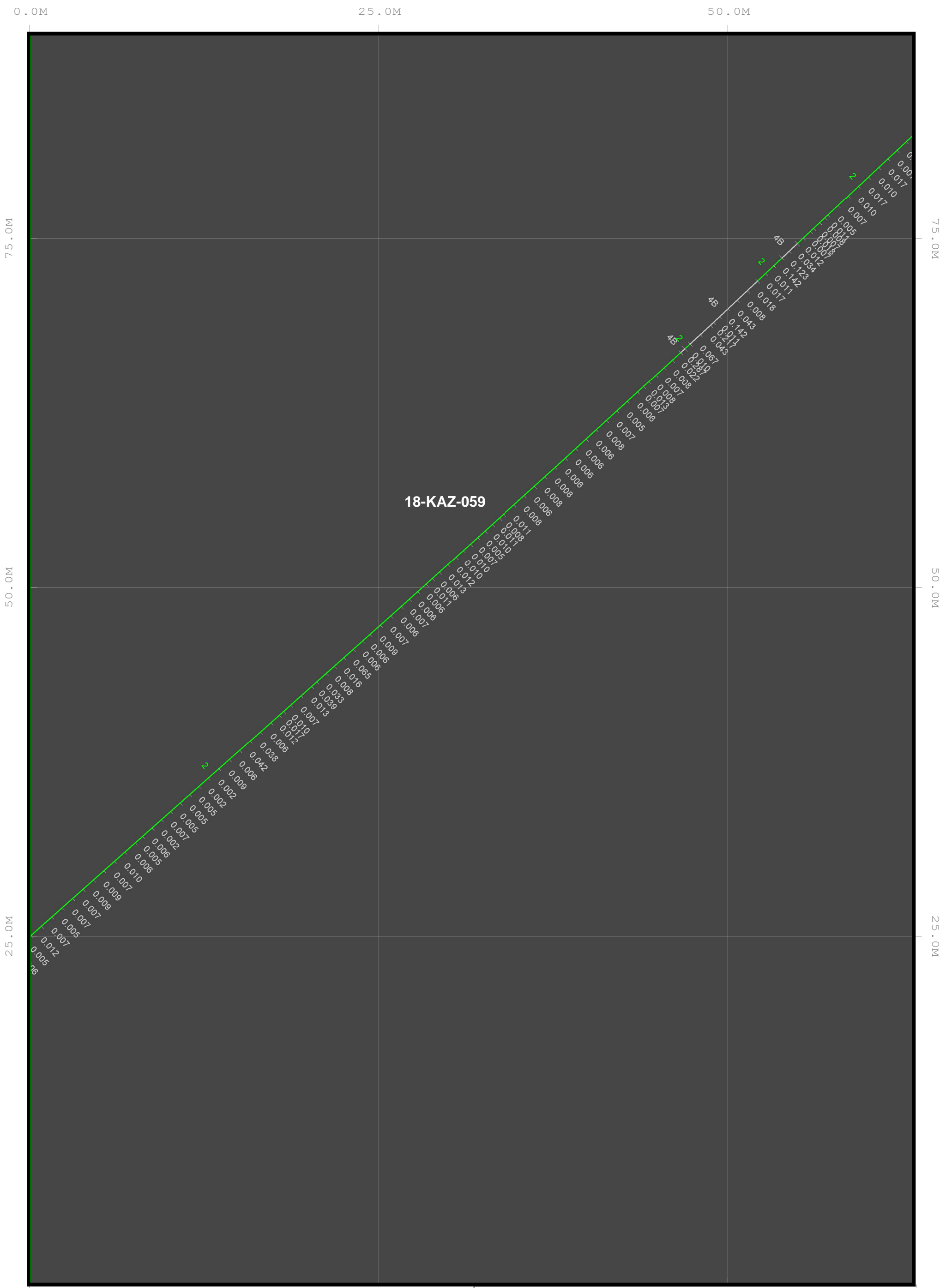
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25.0M

18-KAZ-058, 059

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 4

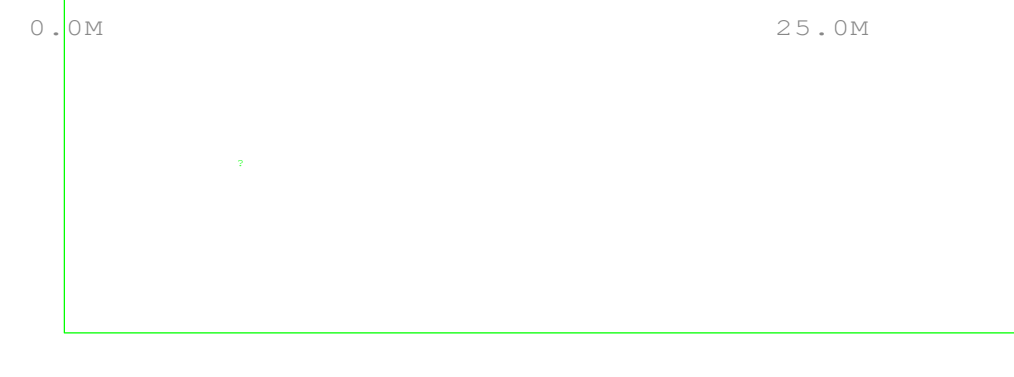
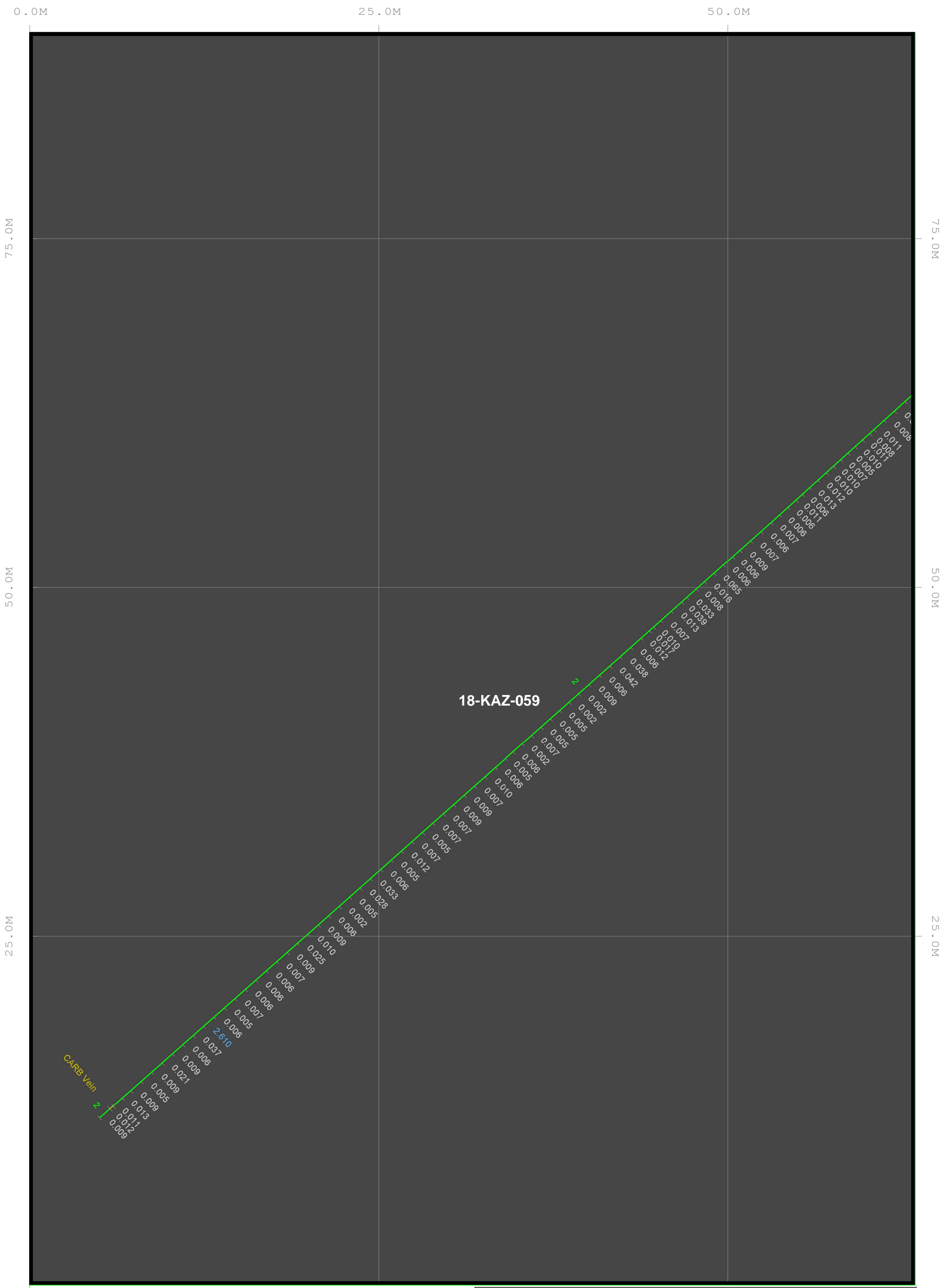


18-KAZ-059

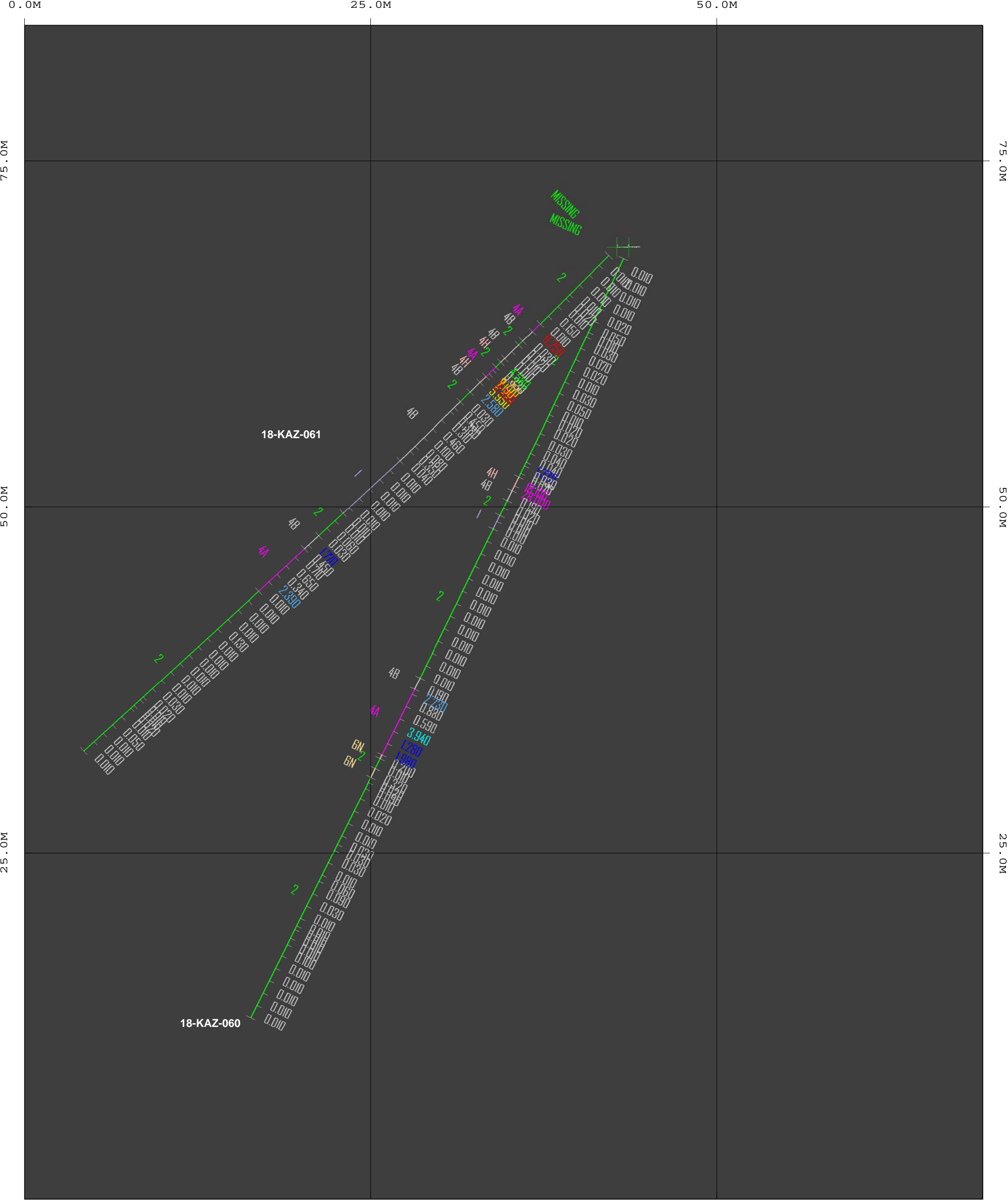
18-KAZ-058, 059

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 3 of 4



<b>18-KAZ-058, 059</b>	
Goldcorp Canada Ltd. Musselwhite Mine Karl Zeemel Project	Scale: 1:250
	Date: 24-Feb-2019
	Project:
	Drawn By:
	Checked:
	Approved:
Drawing No. 4 of 4	



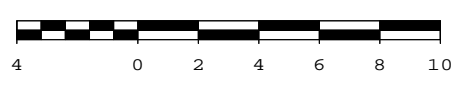
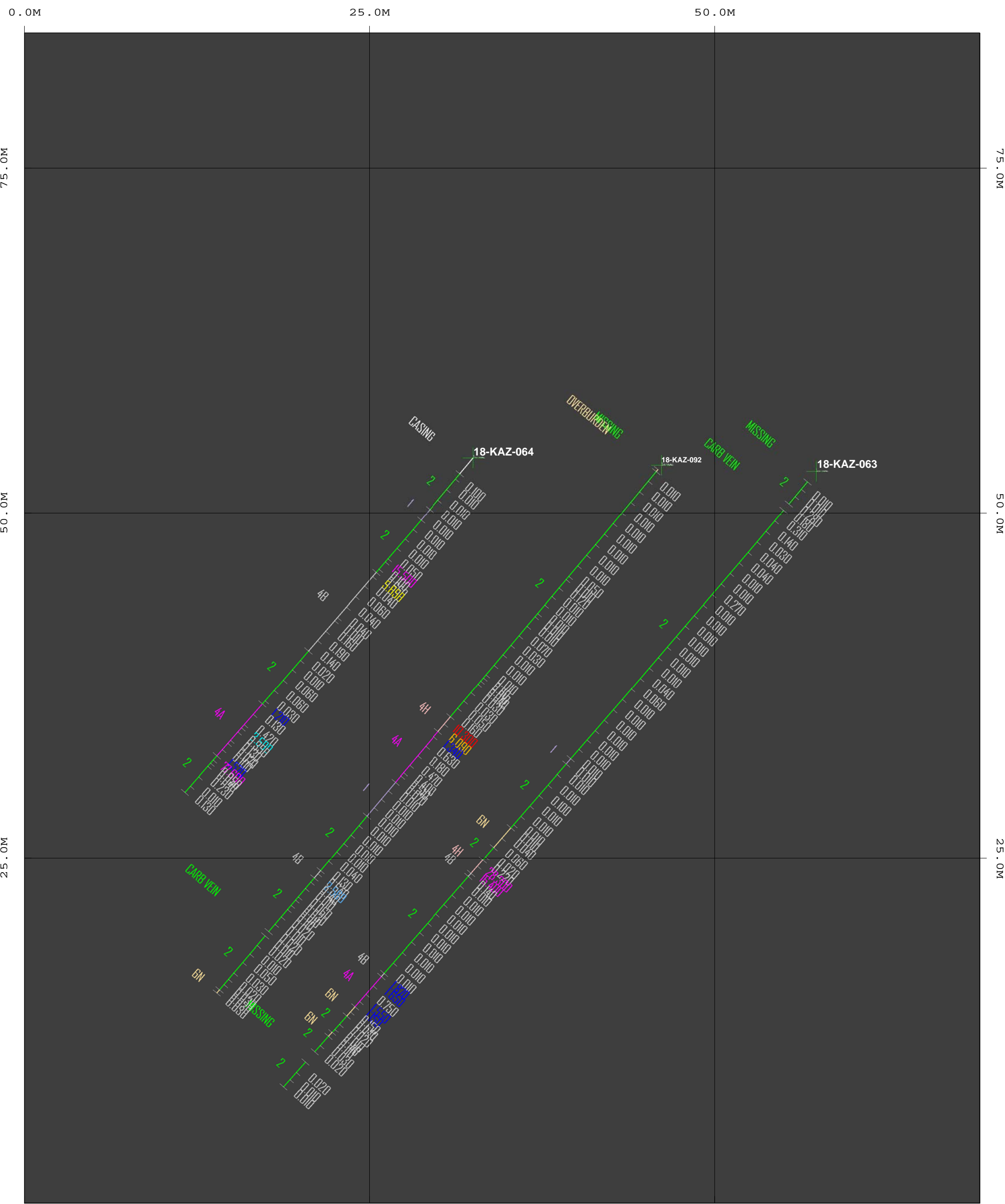
# 18-KAZ-060,061

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:







# 18-KAZ-063,064,092

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No.:







0.0M

25.0M

50.0M

75.0M

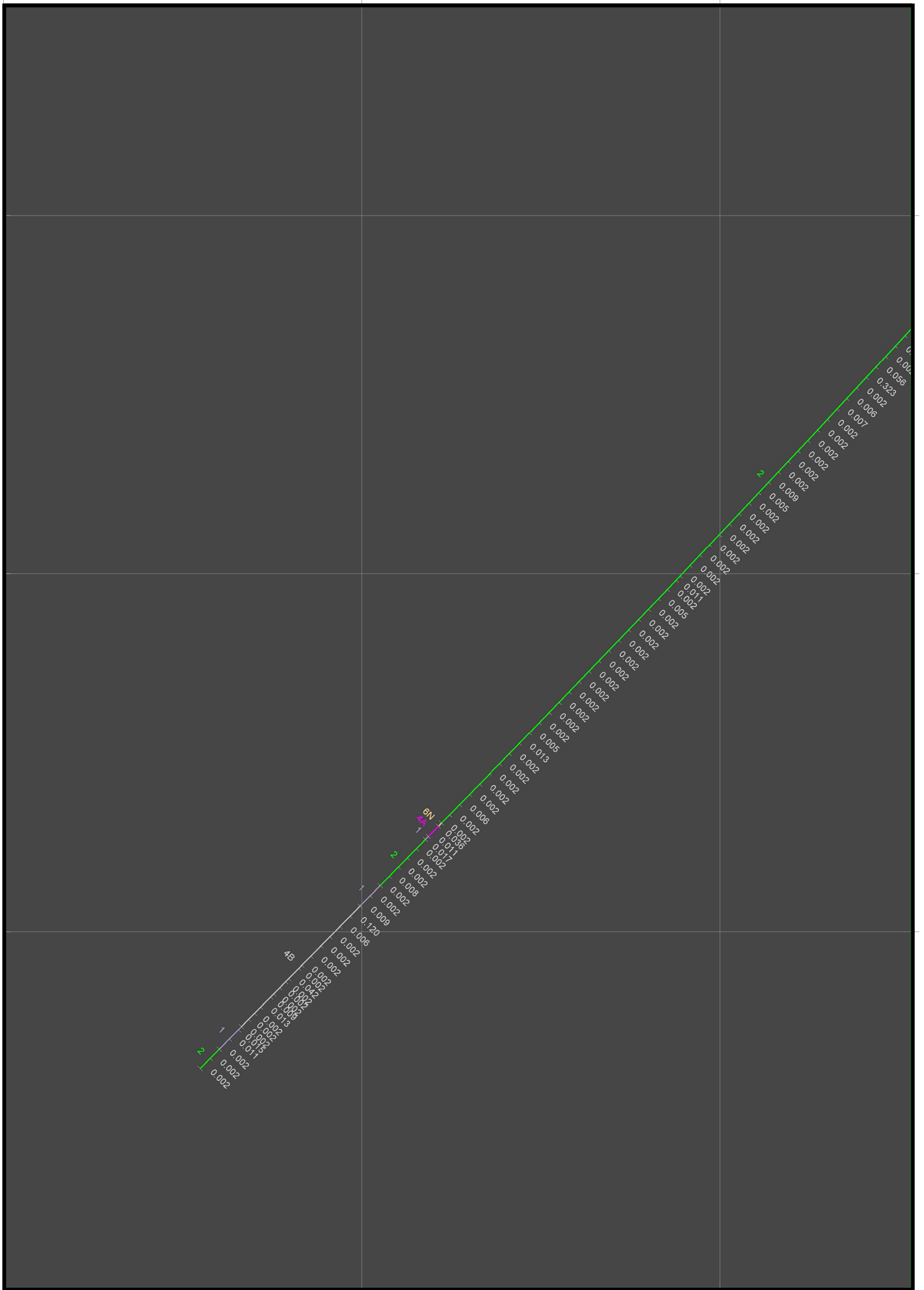
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50.0M

50.0M

25.0M

25.0M



0.0M

25.0M

# 18-KAZ-066

Goldcorp Canada Ltd.  
 Musselwhite Mine  
 Karl Zeemel Project

Scale: 1:250
Date: 24-Feb-2019
Project:
Drawn By:
Checked:
Approved:
Drawing No. 2 of 2

## Appendix XIII – Assay Certificates



**Date Submitted:** 06-Sep-18  
**Invoice No.:** A18-12413  
**Invoice Date:** 09-Oct-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

358 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-12413**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with a large, sweeping 'E' and 'M'.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861501	0.073	
E861502	0.032	
E861503	0.029	
E861504	1.21	
E861505	0.041	
E861506	0.041	
E861507	2.17	
E861508	0.033	
E861509	0.021	
E861510	3.51	
E861511	0.057	
E861512	0.077	
E861513	0.088	
E861514	0.034	
E861515	0.046	
E861516	0.030	
E861517	0.054	
E861518	0.116	
E861519	0.018	
E861520	< 0.005	
E861521	0.027	
E861522	0.018	
E861523	0.019	
E861524	0.069	
E861525	0.545	
E861526	0.127	
E861527	8.97	
E861528	0.034	
E861529	0.023	
E861530	7.05	
E861531	0.018	
E861532	0.017	
E861533	0.023	
E861534	0.017	
E861535	0.025	
E861536	0.041	
E861537	0.224	
E861538	< 0.005	
E861539	< 0.005	
E861540	< 0.005	
E861541	< 0.005	
E861542	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861543	0.267	
E861544	< 0.005	
E861545	0.006	
E861546	0.059	
E861547	0.633	
E861548	0.062	
E861549	< 0.005	
E861550	0.513	
E861551	0.011	
E861552	0.094	
E861553	0.025	
E861554	< 0.005	
E861555	0.053	
E861556	0.048	
E861557	0.068	
E861558	0.057	
E861559	0.095	
E861560	< 0.005	
E861561	0.174	
E861562	< 0.005	
E861563	0.006	
E861564	0.012	
E861565	0.386	
E861566	0.129	
E861567	< 0.005	
E861568	< 0.005	
E861569	0.018	
E861570	> 10.0	13.6
E861571	0.015	
E861572	0.929	
E861573	1.59	
E861574	0.061	
E861575	0.037	
E861576	0.021	
E861577	0.039	
E861578	0.147	
E861579	0.041	
E861580	< 0.005	
E861581	0.034	
E861582	0.175	
E861583	0.086	
E861584	0.099	
E861585	0.011	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861586	0.098	
E861587	0.168	
E861588	0.221	
E861589	0.234	
E861590	3.63	
E861591	0.036	
E861592	0.016	
E861593	0.056	
E861594	0.905	
E861595	0.210	
E861596	3.97	
E861597	1.01	
E861598	0.217	
E861599	0.337	
E861600	< 0.005	
E861601	1.16	
E861602	0.143	
E861603	0.061	
E861604	0.118	
E861605	0.255	
E861606	0.254	
E861607	0.415	
E861608	0.193	
E861609	0.047	
E861610	3.47	
E861611	0.144	
E861612	0.062	
E862409	0.018	
E862410	3.45	
E862411	0.005	
E862412	0.005	
E862413	0.244	
E862414	1.73	
E862415	2.42	
E862416	> 10.0	13.8
E862417	1.02	
E862418	1.03	
E862419	0.193	
E862420	< 0.005	
E862421	2.18	
E862422	0.056	
E862423	0.157	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E862424	0.413	
E862425	0.019	
E862426	0.052	
E862427	0.101	
E862428	0.115	
E862429	0.036	
E862430	6.91	
E862431	0.015	
E862432	0.019	
E862433	0.007	
E862434	< 0.005	
E862435	0.035	
E862436	0.124	
E862437	0.059	
E862438	0.046	
E862439	0.052	
E862440	< 0.005	
E862441	0.219	
E862442	0.043	
E862443	0.292	
E862444	0.326	
E862445	0.122	
E862446	0.046	
E862447	0.009	
E862448	< 0.005	
E862449	0.009	
E862450	0.489	
E862451	0.015	
E862452	0.043	
E862453	0.007	
E862454	0.008	
E862455	0.008	
E868257	0.421	
E868258	0.294	
E868259	0.413	
E868260	0.006	
E868261	0.019	
E868262	0.007	
E868263	0.007	
E868264	0.009	
E868265	0.050	
E868266	0.032	
E868267	0.029	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868268	0.977	
E868269	0.086	
E868270	> 10.0	13.5
E868271	0.915	
E868272	0.857	
E868273	0.045	
E868274	0.327	
E868275	0.075	
E868276	0.039	
E868277	0.017	
E868278	0.053	
E868279	0.059	
E868280	< 0.005	
E868281	0.028	
E868282	< 0.005	
E868283	< 0.005	
E868284	< 0.005	
E868285	< 0.005	
E868286	0.010	
E868287	< 0.005	
E868288	< 0.005	
E868289	0.007	
E868290	3.41	
E868291	0.009	
E868292	0.139	
E868293	0.036	
E868294	0.077	
E868295	0.037	
E868296	0.061	
E868297	0.436	
E868298	1.09	
E868299	0.016	
E868300	< 0.005	
E868301	0.041	
E868302	0.011	
E868303	0.028	
E868304	0.034	
E868305	0.024	
E868306	1.50	
E868307	0.028	
E868308	0.052	
E868309	0.144	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868310	3.44	
E868311	0.020	
E868312	< 0.005	
E868313	< 0.005	
E868314	< 0.005	
E868315	< 0.005	
E868316	0.006	
E868317	0.015	
E868318	0.268	
E868319	< 0.005	
E868320	< 0.005	
E868321	0.029	
E868322	< 0.005	
E868323	0.007	
E868324	< 0.005	
E868325	0.010	
E868326	2.39	
E868327	1.85	
E868328	0.008	
E868329	0.097	
E868330	7.00	
E868331	0.010	
E868332	0.007	
E868333	0.005	
E868334	0.028	
E868335	0.016	
E868336	0.043	
E868337	0.433	
E868338	0.027	
E868339	0.027	
E868340	< 0.005	
E868341	0.007	
E868342	0.007	
E868343	0.011	
E868344	< 0.005	
E868345	0.253	
E868346	0.035	
E868347	0.409	
E868348	0.499	
E868349	0.314	
E868350	0.445	
E868351	1.05	
E868352	1.58	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868353	0.021	
E868354	0.005	
E868355	0.015	
E868356	0.005	
E868357	< 0.005	
E868358	0.005	
E868359	0.007	
E868360	< 0.005	
E868361	0.007	
E868362	0.019	
E868363	0.011	
E868364	0.009	
E868365	0.010	
E868366	0.009	
E868367	0.013	
E868368	0.011	
E868369	0.005	
E868370	> 10.0	13.1
E868371	0.006	
E868372	0.015	
E868373	0.060	
E868374	0.046	
E868375	0.067	
E868376	0.098	
E868377	0.072	
E868378	0.015	
E868379	7.41	
E868380	0.006	
E868381	0.027	
E868382	0.038	
E868383	0.720	
E868384	0.637	
E868385	0.435	
E868386	0.651	
E868387	3.93	
E868388	> 10.0	10.3
E868389	0.247	
E868390	3.43	
E868391	0.044	
E868392	0.030	
E868393	0.168	
E868394	0.011	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868395	0.011	
E868396	0.209	
E868397	0.185	
E868398	0.024	
E868399	0.015	
E868400	< 0.005	
E868401	0.013	
E868402	0.010	
E868403	0.007	
E868404	0.152	
E868405	0.013	
E868406	0.006	
E868407	0.007	
E868408	0.011	
E868409	< 0.005	
E868410	3.46	
E868411	0.005	
E868412	0.023	
E868413	0.013	
E868414	0.018	
E868415	0.013	
E868416	0.028	
E868417	0.006	
E868418	0.006	
E868419	0.012	
E868420	< 0.005	
E868421	0.007	
E868422	0.030	
E868423	0.052	
E868424	0.050	
E868425	0.015	
E868426	0.018	
E868427	0.090	
E868428	0.021	
E868429	0.055	
E868430	6.94	
E868431	0.023	
E868432	0.015	
E868433	0.014	
E868434	0.014	
E868435	0.248	
E868436	0.186	
E868437	0.712	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868438	0.098	
E868439	0.014	
E868440	< 0.005	
E868441	0.009	
E868442	< 0.005	
E868443	0.009	
E868444	0.032	
E868445	0.050	
E868446	0.009	
E868447	0.012	
E868448	0.011	
E868449	0.007	
E868450	0.482	
E868451	0.005	
E868452	0.070	
E868453	0.023	
E868454	0.101	
E868455	0.011	
OREAS 216 (Fire Assay) Meas		6.71
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.857	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.837	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.853	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.834	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.855	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.834	
OREAS 220 (Fire Assay) Cert	0.866	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 209 (Fire Assay) Meas	1.54	1.57
OREAS 209 (Fire Assay) Cert	1.58	1.58
OREAS 209 (Fire Assay) Meas	1.57	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.57	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.56	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
E861501 Orig	0.073	
E861521 Orig	0.027	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861532 Orig	0.017	
E861532 Dup	0.019	
E861551 Orig	0.015	
E861551 Split	0.013	
E861551 Orig	0.011	
E861551 Dup	0.019	
E861556 Orig	0.048	
E861556 Dup	0.069	
E861567 Orig	< 0.005	
E861567 Dup	< 0.005	
E861580 Orig	< 0.005	
E861580 Dup	< 0.005	
E861589 Orig	0.234	
E861589 Dup	0.251	
E861591 Orig	0.036	
E861601 Orig	1.16	
E861601 Split	1.25	
E862409 Orig	0.018	
E862409 Dup	0.005	
E862416 Orig		13.8
E862416 Dup		13.3
E862419 Orig	0.193	
E862419 Dup	0.171	
E862429 Orig	0.036	
E862444 Orig	0.326	
E862444 Dup	0.270	
E862446 Orig	0.046	
E862446 Split	0.061	
E862447 Orig	0.009	
E862447 Dup	0.010	
E868268 Orig	0.977	
E868268 Dup	0.924	
E868271 Orig	0.915	
E868271 Dup	1.08	
E868291 Orig	0.009	
E868291 Dup	0.012	
E868297 Orig	0.436	
E868297 Split	0.497	
E868300 Orig	< 0.005	
E868300 Dup	< 0.005	
E868318 Orig	0.268	
E868318 Dup	0.270	
E868325 Orig	0.010	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868325 Dup	0.008	
E868347 Orig	0.409	
E868347 Split	0.389	
E868348 Orig	0.499	
E868348 Dup	0.450	
E868357 Orig	< 0.005	
E868357 Dup	< 0.005	
E868362 Orig	0.019	
E868362 Dup	0.007	
E868366 Orig	0.009	
E868366 Dup	0.007	
E868392 Orig	0.030	
E868392 Dup	0.028	
E868397 Orig	0.185	
E868397 Split	0.127	
E868397 Split	0.127	
E868421 Orig	0.007	
E868421 Dup	0.011	
E868428 Orig	0.021	
E868428 Dup	0.017	
E868439 Orig	0.014	
E868439 Dup	0.011	
E868447 Orig	0.012	
E868447 Split	0.008	
E868455 Orig	0.011	
E868455 Dup	0.006	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.007	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank	< 0.005	



**Date Submitted:** 13-Sep-18  
**Invoice No.:** A18-12927  
**Invoice Date:** 22-Oct-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

416 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-12927**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861613	0.071	
E861614	0.032	
E861615	< 0.005	
E861616	< 0.005	
E861617	< 0.005	
E861618	< 0.005	
E861619	< 0.005	
E861620	< 0.005	
E861621	< 0.005	
E861622	< 0.005	
E861623	< 0.005	
E861624	0.013	
E861625	0.007	
E861626	< 0.005	
E861627	< 0.005	
E861628	< 0.005	
E861629	0.009	
E861630	6.83	
E861631	0.006	
E861632	0.009	
E861633	0.033	
E861634	0.008	
E861635	0.023	
E861636	0.016	
E861637	0.131	
E861638	0.043	
E861639	0.079	
E861640	< 0.005	
E861641	0.125	
E861642	0.042	
E861643	0.046	
E861644	0.048	
E861645	0.242	
E861646	0.012	
E861647	0.008	
E861648	0.019	
E861649	0.068	
E861650	0.466	
E861651	0.026	
E861652	0.007	
E861653	0.014	
E861654	0.291	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861655	0.292	
E861656	0.414	
E861657	0.245	
E861658	3.39	
E861659	0.940	
E861660	< 0.005	
E861661	0.009	
E861662	0.056	
E861663	0.041	
E861664	0.059	
E861665	0.009	
E861666	0.040	
E861667	0.149	
E861668	0.108	
E861669	0.240	
E861670	> 10.0	13.1
E861671	0.005	
E861672	0.005	
E861673	0.005	
E861674	0.005	
E861675	< 0.005	
E861676	0.005	
E861677	0.006	
E861678	< 0.005	
E861679	< 0.005	
E861680	< 0.005	
E861681	0.536	
E861682	0.011	
E861683	0.830	
E861684	1.20	
E861685	1.24	
E861686	0.888	
E861687	6.59	
E861688	0.216	
E861689	0.408	
E861690	3.36	
E861691	0.013	
E861692	0.015	
E861693	0.099	
E861694	0.010	
E861695	< 0.005	
E861696	0.011	
E861697	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861698	2.78	
E861699	6.24	
E861700	< 0.005	
E861701	4.53	
E861702	2.28	
E861703	7.48	
E861704	4.27	
E861705	> 10.0	10.2
E861706	5.20	
E861707	2.32	
E861708	0.733	
E861709	2.02	
E861710	3.48	
E861711	0.533	
E861712	6.03	
E861713	2.06	
E861714	3.91	
E861715	9.12	
E861716	1.39	
E861717	0.409	
E861718	0.203	
E861719	0.061	
E861720	0.010	
E861721	0.010	
E861722	0.017	
E861723	0.009	
E861724	0.154	
E861725	0.193	
E861726	0.021	
E861727	0.351	
E861728	0.010	
E861729	0.009	
E861730	6.85	
E861731	0.009	
E861732	< 0.005	
E861733	0.018	
E861734	1.96	
E861735	6.81	
E861736	5.41	
E861737	1.35	
E861738	2.46	
E861739	0.071	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861740	< 0.005	
E861741	0.390	
E861742	2.69	
E861743	3.89	
E861744	3.96	
E861745	4.62	
E861746	0.476	
E861747	0.005	
E861748	0.005	
E861749	0.005	
E861750	0.515	
E861751	0.007	
E861752	0.006	
E861753	< 0.005	
E861754	0.007	
E861755	0.005	
E861756	0.010	
E861757	0.689	
E861758	0.666	
E861759	0.050	
E861760	< 0.005	
E861761	0.011	
E861762	0.314	
E861763	0.354	
E861764	0.050	
E861765	0.006	
E861766	0.014	
E861767	0.011	
E861768	0.132	
E861769	0.021	
E861770	> 10.0	13.4
E861771	0.291	
E861772	< 0.005	
E861773	0.198	
E861774	0.018	
E861775	0.007	
E861776	0.122	
E861777	0.069	
E861778	0.595	
E861779	0.149	
E861780	< 0.005	
E861781	0.117	
E861782	0.357	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861783	0.009	
E861784	0.644	
E861785	0.028	
E861786	0.016	
E861787	< 0.005	
E861788	< 0.005	
E861789	0.088	
E861790	3.67	
E861791	0.008	
E861792	0.103	
E861793	0.060	
E861794	0.113	
E861795	0.011	
E861796	0.058	
E861797	0.051	
E861798	0.017	
E861799	0.010	
E861800	< 0.005	
E861801	0.018	
E861802	0.148	
E861803	0.040	
E861804	0.018	
E861805	< 0.005	
E861806	0.007	
E861807	0.006	
E861808	< 0.005	
E861809	< 0.005	
E861810	3.40	
E861811	< 0.005	
E861812	< 0.005	
E861813	0.007	
E861814	0.103	
E861815	0.064	
E861816	0.068	
E861817	0.039	
E861818	0.896	
E861819	0.172	
E861820	< 0.005	
E861821	0.687	
E861822	0.199	
E861823	0.012	
E861824	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861825	0.011	
E861826	0.010	
E861827	0.028	
E861828	0.011	
E861829	0.141	
E861830	7.25	
E861831	0.006	
E861832	0.005	
E861833	< 0.005	
E882721	< 0.005	
E882722	0.007	
E882723	0.007	
E882724	0.022	
E882725	< 0.005	
E882726	0.047	
E882727	0.017	
E882728	0.014	
E882729	0.008	
E882730	7.17	
E882731	< 0.005	
E882732	0.022	
E882733	0.600	
E882734	< 0.005	
E882735	0.008	
E882736	0.007	
E882737	0.362	
E882738	0.057	
E882739	< 0.005	
E882740	< 0.005	
E882741	0.006	
E882742	0.007	
E882743	0.006	
E882744	0.045	
E882745	3.84	
E882746	3.29	
E882747	0.023	
E882748	0.037	
E882749	0.072	
E882750	0.546	
E882751	0.023	
E882752	0.016	
E882753	0.030	
E882754	0.035	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882755	0.007	
E882756	0.011	
E882757	0.017	
E882758	0.008	
E882759	0.009	
E882760	< 0.005	
E882761	0.091	
E882762	0.050	
E882763	0.015	
E882764	0.014	
E882765	0.021	
E882766	0.652	
E882767	0.601	
E882768	9.66	
E882769	0.425	
E882770	> 10.0	13.6
E882771	0.139	
E882772	0.042	
E882773	0.113	
E882774	0.120	
E882775	0.045	
E882776	0.015	
E882777	0.006	
E882778	5.81	
E882779	0.007	
E882780	0.012	
E882781	0.009	
E862456	0.011	
E862457	0.131	
E862458	0.083	
E862459	0.330	
E862460	< 0.005	
E862461	< 0.005	
E862462	0.011	
E862463	0.046	
E862464	0.020	
E862465	2.08	
E862466	0.019	
E862467	1.26	
E862468	4.46	
E862469	3.28	
E862470	> 10.0	13.1

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E862471	0.602	
E862472	0.648	
E862473	0.711	
E862474	0.036	
E862475	0.008	
E862476	< 0.005	
E862477	< 0.005	
E862478	< 0.005	
E862479	< 0.005	
E862480	< 0.005	
E862481	0.009	
E862482	< 0.005	
E862483	0.007	
E862484	0.078	
E862485	0.019	
E862486	0.019	
E862487	0.007	
E862488	0.008	
E862489	0.007	
E862490	3.43	
E862491	0.008	
E862492	< 0.005	
E862493	0.015	
E862494	0.007	
E862495	0.144	
E862496	0.006	
E862497	0.006	
E862498	0.049	
E862499	0.013	
E862500	< 0.005	
E882801	< 0.005	
E882802	0.005	
E882803	< 0.005	
E882804	< 0.005	
E882805	0.006	
E882806	< 0.005	
E882807	< 0.005	
E882808	0.005	
E882809	< 0.005	
E882810	3.56	
E882811	0.005	
E882812	< 0.005	
E882813	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882814	0.007	
E882815	0.017	
E882816	0.014	
E882817	0.009	
E882818	0.007	
E868456	0.019	
E868457	0.014	
E868458	0.025	
E868459	0.014	
E868460	< 0.005	
E868461	0.039	
E868462	0.010	
E868463	< 0.005	
E868464	0.048	
E868465	< 0.005	
E868466	< 0.005	
E868467	< 0.005	
E868468	< 0.005	
E868469	< 0.005	
E868470	> 10.0	13.2
E868471	0.150	
E868472	0.112	
E868473	0.005	
E868474	0.011	
E868475	0.017	
E868476	0.007	
E868477	0.008	
E868478	0.005	
E868479	0.008	
E868480	< 0.005	
E868481	0.050	
E868482	0.036	
E868483	0.042	
E868484	0.353	
E868485	2.16	
E868486	0.155	
E868487	0.014	
E868488	0.012	
E868489	< 0.005	
E868490	3.67	
E868491	0.008	
E868492	0.010	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868493	0.009	
E868494	0.013	
E868495	0.006	
E868496	0.019	
E868497	0.006	
E868498	0.008	
E868499	0.010	
E868500	< 0.005	
E868501	0.037	
E868502	0.020	
E868503	0.086	
E868504	0.136	
E868505	0.013	
E868506	0.009	
E868507	0.006	
E868508	0.005	
E868509	0.005	
E868510	3.44	
E868511	0.005	
E868512	0.005	
E868513	0.010	
E868514	0.030	
E868515	0.011	
E868516	0.066	
E868517	0.038	
E868518	0.009	
E868519	0.018	
E868520	0.008	
E868521	0.020	
E868522	0.023	
E868523	0.046	
E868524	0.016	
E868525	0.013	
E868526	0.015	
OREAS 220 (Fire Assay) Meas	0.828	0.84
OREAS 220 (Fire Assay) Cert	0.866	0.866
OREAS 220 (Fire Assay) Meas	0.832	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.842	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.828	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.856	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.839	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.852	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.837	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.830	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 209 (Fire Assay) Meas	1.53	1.53
OREAS 209 (Fire Assay) Cert	1.58	1.58
OREAS 209 (Fire Assay) Meas	1.49	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.56	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.56	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
E861613 Orig	0.071	
E861613 Dup	0.072	
E861633 Orig	0.033	
E861633 Dup	0.032	
E861644 Orig	0.048	
E861644 Dup	0.046	
E861662 Orig	0.056	
E861662 Split	0.060	
E861668 Orig	0.108	
E861668 Dup	0.117	
E861679 Orig	< 0.005	
E861679 Dup	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861696 Orig	0.011	
E861696 Dup	0.005	
E861711 Orig	0.533	
E861711 Dup	0.486	
E861712 Orig	6.03	
E861712 Split	5.76	
E861726 Orig	0.021	
E861726 Dup	0.021	
E861735 Orig	6.81	
E861735 Dup	6.44	
E861744 Orig	3.96	
E861744 Dup	3.96	
E861762 Orig	0.314	
E861762 Split	0.296	
E861771 Orig	0.291	
E861771 Dup	0.215	
E861782 Orig	0.357	
E861782 Dup	0.462	
E861797 Orig	0.051	
E861797 Dup	0.051	
E861799 Orig	0.010	
E861799 Dup	0.007	
E861806 Orig	0.007	
E861806 Dup	0.005	
E861812 Orig	< 0.005	
E861812 Split	< 0.005	
E861816 Orig	0.068	
E861816 Dup	0.051	
E861833 Orig	< 0.005	
E861833 Dup	0.010	
E882727 Orig	0.017	
E882727 Dup	0.017	
E882749 Orig	0.072	
E882749 Split	0.059	
E882761 Orig	0.091	
E882761 Dup	0.085	
E882772 Orig	0.042	
E882772 Dup	0.047	
E862463 Orig	0.046	
E862463 Dup	0.063	
E862471 Orig	0.602	
E862471 Dup	0.675	
E862473 Orig	0.711	





	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 19-Sep-18  
**Invoice No.:** A18-13446  
**Invoice Date:** 13-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

434 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-13446**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé".

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868527	0.013	
E868528	0.033	
E868529	0.074	
E868530	6.92	
E868531	0.124	
E868532	< 0.005	
E868533	0.058	
E868534	0.150	
E868535	0.018	
E868536	0.057	
E868537	0.034	
E868538	< 0.005	
E868539	< 0.005	
E868540	< 0.005	
E868541	0.064	
E868542	0.064	
E868543	< 0.005	
E868544	0.013	
E868545	0.053	
E868546	0.018	
E868547	0.007	
E868548	0.058	
E868549	2.46	
E868550	0.445	
E868551	0.334	
E868552	0.708	
E868553	0.026	
E868554	0.111	
E868555	0.261	
E868556	0.288	
E868557	0.006	
E868558	0.169	
E868559	0.021	
E868560	< 0.005	
E868561	< 0.005	
E868562	< 0.005	
E868563	0.038	
E868564	0.039	
E868565	0.040	
E868566	0.019	
E868567	< 0.005	
E868568	0.112	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868569	0.146	
E868570	> 10.0	13.1
E868571	0.099	
E868572	0.078	
E868573	0.473	
E868574	0.033	
E868575	0.146	
E868576	0.212	
E868577	0.081	
E868578	< 0.005	
E868579	< 0.005	
E868580	< 0.005	
E868581	0.007	
E868582	0.006	
E868583	< 0.005	
E868584	< 0.005	
E868585	< 0.005	
E868586	< 0.005	
E868587	< 0.005	
E868588	< 0.005	
E868589	< 0.005	
E868590	3.46	
E868591	< 0.005	
E868592	< 0.005	
E868593	< 0.005	
E868594	< 0.005	
E868595	< 0.005	
E868596	0.010	
E868597	< 0.005	
E868598	< 0.005	
E868599	< 0.005	
E868600	< 0.005	
E868601	0.005	
E868602	0.007	
E868603	0.049	
E868604	0.015	
E868605	< 0.005	
E868606	0.011	
E868607	< 0.005	
E868608	< 0.005	
E868609	0.013	
E868610	3.63	
E868611	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868612	< 0.005	
E868613	0.220	
E868614	0.005	
E868615	0.116	
E868616	0.112	
E868617	0.006	
E868618	0.010	
E868619	< 0.005	
E868620	< 0.005	
E868621	0.021	
E868622	< 0.005	
E868623	< 0.005	
E868624	0.006	
E868625	< 0.005	
E868626	0.009	
E868627	< 0.005	
E868628	< 0.005	
E868629	< 0.005	
E868630	6.89	
E868631	0.005	
E868632	0.010	
E868633	< 0.005	
E868634	< 0.005	
E868635	0.006	
E868636	< 0.005	
E868637	0.006	
E868638	< 0.005	
E868639	< 0.005	
E868640	< 0.005	
E868641	< 0.005	
E868642	< 0.005	
E868643	< 0.005	
E868644	< 0.005	
E868645	< 0.005	
E868646	< 0.005	
E868647	< 0.005	
E868648	< 0.005	
E868649	0.043	
E868650	0.525	
E868651	0.007	
E868652	0.006	
E868653	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868654	0.005	
E868655	< 0.005	
E868656	0.005	
E868657	< 0.005	
E868658	< 0.005	
E868659	< 0.005	
E868660	< 0.005	
E868661	0.018	
E882819	< 0.005	
E882820	< 0.005	
E882821	< 0.005	
E882822	< 0.005	
E882823	0.007	
E882824	< 0.005	
E882825	0.006	
E882826	< 0.005	
E882827	< 0.005	
E882828	< 0.005	
E882829	< 0.005	
E882830	7.01	
E882831	< 0.005	
E882832	< 0.005	
E882833	< 0.005	
E882834	< 0.005	
E882835	< 0.005	
E882836	< 0.005	
E882837	< 0.005	
E882838	< 0.005	
E882839	0.029	
E882840	< 0.005	
E882841	0.007	
E882842	0.054	
E882843	< 0.005	
E882844	0.006	
E882845	0.130	
E882846	4.68	
E882847	0.037	
E882848	0.017	
E882849	6.44	
E882850	0.461	
E882851	0.076	
E882852	0.041	
E882853	0.079	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882854	0.010	
E882855	0.029	
E882856	0.006	
E882857	0.106	
E882858	> 10.0	34.8
E882859	0.016	
E882860	< 0.005	
E882861	0.230	
E882862	0.032	
E882863	0.024	
E882864	0.006	
E882865	< 0.005	
E882866	< 0.005	
E882867	< 0.005	
E882868	0.015	
E882869	< 0.005	
E882870	> 10.0	13.3
E882871	< 0.005	
E882872	< 0.005	
E882873	< 0.005	
E882874	< 0.005	
E882875	< 0.005	
E882876	< 0.005	
E882877	< 0.005	
E882878	0.055	
E882879	0.012	
E882880	< 0.005	
E882881	< 0.005	
E882882	< 0.005	
E882883	< 0.005	
E882884	< 0.005	
E882885	< 0.005	
E882886	< 0.005	
E882887	< 0.005	
E882888	0.006	
E882889	< 0.005	
E882890	3.43	
E882891	< 0.005	
E882892	< 0.005	
E882893	0.016	
E882894	0.027	
E882895	0.076	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882896	0.040	
E882897	0.006	
E882898	0.075	
E882899	0.007	
E882900	< 0.005	
E882901	0.009	
E882902	0.012	
E868667	0.011	
E868668	0.014	
E868669	0.021	
E868670	> 10.0	13.5
E868671	0.100	
E868672	0.028	
E868673	0.015	
E868674	0.005	
E868675	0.009	
E868676	0.013	
E868677	0.017	
E868678	0.024	
E868679	0.136	
E868680	< 0.005	
E868681	0.035	
E868682	0.047	
E868683	0.024	
E868684	0.087	
E868685	< 0.005	
E868686	< 0.005	
E868687	< 0.005	
E868688	0.008	
E868689	0.023	
E868690	3.46	
E868691	0.006	
E868692	0.009	
E868693	0.008	
E868694	0.140	
E868695	0.225	
E868696	0.890	
E868697	0.159	
E868698	0.650	
E868699	0.022	
E868700	< 0.005	
E868701	0.017	
E868702	0.045	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868703	0.036	
E868704	< 0.005	
E868705	0.005	
E868706	0.005	
E868707	0.096	
E868708	0.035	
E868709	0.092	
E868710	3.71	
E868711	0.010	
E868712	< 0.005	
E868713	< 0.005	
E868714	< 0.005	
E868715	0.006	
E868716	< 0.005	
E868717	< 0.005	
E868718	0.011	
E868719	< 0.005	
E868720	< 0.005	
E868721	< 0.005	
E868722	< 0.005	
E868723	< 0.005	
E868724	< 0.005	
E868725	< 0.005	
E868726	< 0.005	
E868727	< 0.005	
E868728	0.011	
E868729	0.009	
E868730	7.30	
E868731	0.005	
E868732	0.005	
E868733	0.012	
E868734	0.018	
E868735	< 0.005	
E868736	< 0.005	
E868737	< 0.005	
E868738	0.017	
E868739	0.012	
E868740	< 0.005	
E868741	0.021	
E868742	0.012	
E868743	0.025	
E868744	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868745	0.006	
E868746	0.005	
E868747	< 0.005	
E868748	< 0.005	
E868749	< 0.005	
E868750	0.480	
E868751	< 0.005	
E868752	< 0.005	
E868753	< 0.005	
E868754	< 0.005	
E868755	< 0.005	
E868756	< 0.005	
E868757	< 0.005	
E868758	< 0.005	
E868759	< 0.005	
E868760	< 0.005	
E868761	< 0.005	
E868762	< 0.005	
E868763	< 0.005	
E868764	< 0.005	
E868765	< 0.005	
E868766	< 0.005	
E868767	< 0.005	
E868768	< 0.005	
E868769	< 0.005	
E868770	> 10.0	13.2
E868771	0.005	
E868772	< 0.005	
E868773	< 0.005	
E868774	< 0.005	
E868775	0.013	
E868776	< 0.005	
E868777	< 0.005	
E868778	< 0.005	
E868779	0.026	
E868780	< 0.005	
E868781	< 0.005	
E868782	< 0.005	
E868783	0.005	
E868784	< 0.005	
E868785	< 0.005	
E868786	< 0.005	
E868787	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868788	< 0.005	
E868789	< 0.005	
E868790	3.41	
E868791	0.005	
E868792	0.008	
E868793	< 0.005	
E868794	0.010	
E868795	< 0.005	
E868796	0.006	
E868797	< 0.005	
E868798	< 0.005	
E868799	< 0.005	
E868800	< 0.005	
E868801	< 0.005	
E868802	0.006	
E868803	0.006	
E868804	< 0.005	
E868805	0.014	
E868806	< 0.005	
E868807	< 0.005	
E868808	< 0.005	
E868809	< 0.005	
E868810	3.41	
E868811	0.013	
E868812	0.008	
E868813	< 0.005	
E868814	0.008	
E868815	0.005	
E868816	< 0.005	
E868817	0.006	
E868818	< 0.005	
E868819	< 0.005	
E868820	< 0.005	
E868821	< 0.005	
E868822	< 0.005	
E868823	< 0.005	
E868824	< 0.005	
E868825	< 0.005	
E868826	< 0.005	
E868827	< 0.005	
E868828	< 0.005	
E868829	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868830	6.84	
E868831	< 0.005	
E868832	< 0.005	
E868833	< 0.005	
E868834	0.005	
E868835	< 0.005	
E868836	< 0.005	
E868837	< 0.005	
E868838	< 0.005	
E868839	< 0.005	
E868840	< 0.005	
E868841	< 0.005	
E868842	< 0.005	
E868843	< 0.005	
E868844	< 0.005	
E868845	< 0.005	
E868846	< 0.005	
E868847	< 0.005	
E868848	< 0.005	
E868849	< 0.005	
E868850	0.459	
E868851	< 0.005	
E868852	< 0.005	
E868853	< 0.005	
E868854	< 0.005	
E868855	< 0.005	
E868856	< 0.005	
E868857	< 0.005	
E868858	< 0.005	
E868859	< 0.005	
E868860	< 0.005	
E868861	< 0.005	
E868862	< 0.005	
E868863	< 0.005	
E868864	< 0.005	
E868865	0.005	
E868866	< 0.005	
E868867	< 0.005	
E868868	0.005	
E868869	< 0.005	
E868870	> 10.0	13.1
E868871	0.005	
E868872	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868873	< 0.005	
E868874	< 0.005	
E868875	< 0.005	
E868876	< 0.005	
E868877	< 0.005	
E868878	< 0.005	
E868879	< 0.005	
E868880	< 0.005	
E868881	< 0.005	
OREAS 220 (Fire Assay) Meas	0.839	0.88
OREAS 220 (Fire Assay) Cert	0.866	0.866
OREAS 220 (Fire Assay) Meas	0.841	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.839	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.840	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.855	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.863	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.848	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.871	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.851	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.844	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.836	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.826	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 209 (Fire Assay) Meas	1.51	1.62
OREAS 209 (Fire Assay) Cert	1.58	1.58
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.59	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.57	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.57	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
E868541 Orig	0.064	
E868541 Dup	0.068	
E868548 Orig	0.058	
E868548 Dup	0.066	
E868549 Orig	2.46	
E868549 Dup	2.18	
E868559 Orig	0.021	
E868559 Dup	0.023	
E868576 Orig	0.201	
E868576 Split	0.161	
E868576 Orig	0.212	
E868576 Dup	0.191	
E868582 Orig	0.006	
E868582 Dup	0.005	
E868593 Orig	< 0.005	
E868593 Dup	< 0.005	
E868606 Orig	0.011	
E868606 Dup	< 0.005	
E868615 Orig	0.116	
E868615 Dup	0.117	
E868624 Orig	0.006	
E868624 Dup	< 0.005	
E868626 Orig	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868626 Split	< 0.005	
E868644 Orig	< 0.005	
E868644 Dup	< 0.005	
E868651 Orig	0.007	
E868651 Dup	0.008	
E882819 Orig	< 0.005	
E882819 Dup	< 0.005	
E882832 Orig	< 0.005	
E882832 Dup	< 0.005	
E882833 Orig	< 0.005	
E882833 Split	< 0.005	
E882840 Orig	< 0.005	
E882840 Dup	< 0.005	
E882854 Orig	0.010	
E882854 Dup	0.009	
E882866 Orig	< 0.005	
E882866 Dup	< 0.005	
E882875 Orig	< 0.005	
E882875 Dup	< 0.005	
E882883 Orig	< 0.005	
E882883 Split	< 0.005	
E882883 Split	< 0.005	
E868669 Orig	0.021	
E868669 Dup	0.018	
E868676 Orig	0.013	
E868676 Dup	0.015	
E868687 Orig	< 0.005	
E868687 Dup	< 0.005	
E868697 Orig	0.159	
E868697 Split	0.190	
E868698 Orig	0.650	
E868698 Dup	0.618	
E868707 Orig	0.096	
E868707 Dup	0.088	
E868716 Orig	< 0.005	
E868716 Dup	< 0.005	
E868733 Orig	0.012	
E868733 Dup	0.011	
E868742 Orig	0.012	
E868742 Dup	0.013	
E868747 Orig	< 0.005	
E868747 Split	< 0.005	
E868751 Orig	< 0.005	





	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	



**Date Submitted:** 26-Sep-18  
**Invoice No.:** A18-13950  
**Invoice Date:** 14-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

288 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-13950**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861303	0.008	
E861304	0.009	
E861305	0.016	
E861306	0.009	
E861307	0.009	
E861308	0.008	
E861309	0.023	
E861310	3.48	
E861311	0.020	
E861312	0.016	
E861313	0.026	
E861314	2.56	
E861315	0.017	
E861316	0.043	
E861317	0.074	
E861318	0.040	
E861319	0.091	
E861320	< 0.005	
E861321	0.036	
E861322	0.023	
E861323	0.110	
E861324	0.020	
E861325	0.030	
E861326	0.014	
E861327	0.161	
E861328	0.144	
E861329	0.016	
E861330	6.86	
E861331	0.050	
E861332	0.041	
E861333	0.030	
E861334	0.006	
E861335	0.436	
E861336	0.008	
E861337	0.017	
E861338	0.007	
E861339	0.029	
E861340	< 0.005	
E861341	0.106	
E861342	0.020	
E861343	0.023	
E861344	0.148	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861345	0.053	
E861346	0.011	
E861347	0.009	
E861348	0.011	
E861349	0.020	
E861350	0.451	
E861351	0.014	
E861352	2.88	
E861353	0.086	
E861354	0.006	
E861355	0.077	
E861356	0.027	
E861357	0.018	
E861358	0.277	
E861359	0.028	
E861360	< 0.005	
E861361	1.39	
E861362	0.117	
E861363	0.005	
E861364	0.006	
E861365	0.009	
E861366	0.010	
E861367	0.230	
E861368	1.09	
E861369	2.12	
E861370	> 10.0	13.0
E861371	0.989	
E861372	0.246	
E861373	0.265	
E861374	1.70	
E861375	0.372	
E861376	1.42	
E861377	3.16	
E861378	1.21	
E861379	2.26	
E861380	< 0.005	
E861381	0.169	
E861382	> 10.0	19.3
E861383	> 10.0	13.9
E861384	6.35	
E861385	0.026	
E861386	0.017	
E861387	0.023	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861388	0.598	
E861389	0.024	
E861390	3.42	
E861391	0.035	
E861392	0.011	
E861393	0.013	
E861394	0.028	
E861395	0.014	
E861396	0.008	
E861397	0.009	
E861398	0.440	
E861399	0.235	
E861400	< 0.005	
E861401	0.919	
E861402	0.040	
E861403	0.056	
E861404	0.033	
E861405	0.008	
E861406	0.118	
E861407	0.126	
E861408	0.427	
E861409	0.390	
E861410	3.42	
E861411	1.63	
E861412	0.139	
E861413	0.312	
E861414	0.274	
E861415	0.449	
E861416	1.49	
E861417	0.274	
E861418	0.061	
E861419	0.234	
E861420	< 0.005	
E861421	0.706	
E861422	0.053	
E861423	0.485	
E861424	7.71	
E861425	0.338	
E861426	1.68	
E868925	0.007	
E868926	0.010	
E868927	0.015	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868928	< 0.005	
E868929	< 0.005	
E868930	6.90	
E868931	0.008	
E868932	0.025	
E868933	0.008	
E868934	0.007	
E868935	0.020	
E868936	0.007	
E868937	0.007	
E868938	0.007	
E868939	0.007	
E868940	0.005	
E868941	0.029	
E868942	0.011	
E868943	0.023	
E868944	0.046	
E868945	0.081	
E868946	0.059	
E868947	0.061	
E868948	0.038	
E868949	1.09	
E868950	0.524	
E868951	0.044	
E868952	0.276	
E868953	0.393	
E868954	8.10	
E868955	3.36	
E868956	> 10.0	12.9
E868957	1.27	
E868958	0.042	
E868959	0.322	
E868960	< 0.005	
E868961	0.007	
E868962	< 0.005	
E868963	< 0.005	
E868964	< 0.005	
E868965	0.115	
E868966	7.36	
E868967	> 10.0	18.6
E868968	1.32	
E868969	0.412	
E868970	> 10.0	13.4

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868971	0.603	
E868972	1.17	
E868973	3.80	
E868974	2.66	
E868975	0.174	
E868976	0.166	
E868977	0.029	
E868978	0.579	
E868979	1.40	
E868980	< 0.005	
E868981	0.060	
E868982	0.077	
E868983	0.021	
E868984	0.007	
E868985	0.006	
E868986	0.007	
E868987	< 0.005	
E868988	0.007	
E868989	0.007	
E868990	3.41	
E868991	0.007	
E868992	0.006	
E868993	< 0.005	
E868994	0.005	
E868995	0.007	
E868996	0.005	
E868997	0.008	
E868998	0.014	
E868999	0.034	
E869000	< 0.005	
E882782	0.028	
E882783	0.007	
E882784	0.010	
E882785	0.044	
E882786	0.013	
E882787	0.012	
E882788	0.025	
E882789	0.005	
E882790	3.61	
E882791	0.006	
E882792	0.064	
E882793	0.006	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882794	< 0.005	
E882795	< 0.005	
E882796	< 0.005	
E882797	< 0.005	
E882798	< 0.005	
E882799	< 0.005	
E882800	< 0.005	
E882915	< 0.005	
E882916	< 0.005	
E882917	0.005	
E882918	0.005	
E882919	0.007	
E882920	< 0.005	
E882921	< 0.005	
E882922	0.007	
E882923	0.006	
E882924	< 0.005	
E882925	< 0.005	
E882926	< 0.005	
E882927	0.005	
E882928	0.008	
E882929	< 0.005	
E882930	6.83	
E882931	0.006	
E882932	< 0.005	
E882933	0.020	
E882934	0.027	
E882935	0.007	
E882936	0.008	
E882937	< 0.005	
E882938	0.005	
E882939	0.039	
E882940	< 0.005	
E882941	0.028	
E882942	0.011	
E882943	0.007	
E882944	< 0.005	
E882945	0.005	
E882946	< 0.005	
E882947	0.005	
E882948	0.006	
E882949	< 0.005	
E882950	0.542	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882951	< 0.005	
E861197	0.011	
E861198	0.019	
E861199	0.019	
E861200	< 0.005	
E861201	0.100	
E861202	0.013	
E861203	0.018	
E861204	0.925	
E861205	0.093	
E861206	0.013	
E861207	0.008	
E861208	0.013	
E861209	0.009	
E861210	3.41	
E861211	0.007	
E861212	0.008	
E861213	0.005	
E861214	0.007	
E861215	0.111	
E861216	0.024	
E861217	0.069	
E861218	0.030	
E861219	0.017	
E861220	< 0.005	
E861221	0.011	
E861222	0.018	
E861223	0.022	
E861224	0.231	
E861225	0.038	
E861226	0.105	
E861227	1.92	
E861228	1.48	
OREAS 214 Meas		3.10
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.93
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.834	
OREAS 220 (Fire Assay) Cert	0.866	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 220 (Fire Assay) Meas	0.831	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.846	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.857	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.840	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.56	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.49	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.49	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
E861313 Orig	0.026	
E861313 Dup	0.026	
E861322 Orig	0.023	
E861322 Dup	0.023	
E861338 Orig	0.007	
E861338 Dup	0.008	
E861352 Orig	2.88	
E861352 Split	2.86	
E861357 Orig	0.018	
E861357 Dup	0.019	
E861368 Orig	1.09	
E861368 Dup	1.16	
E861387 Orig	0.023	
E861387 Dup	0.029	
E861394 Orig	0.028	
E861394 Dup	0.021	
E861402 Orig	0.040	
E861402 Split	0.049	
E861404 Orig	0.033	
E861404 Dup	0.027	
E861422 Orig	0.053	
E861422 Dup	0.052	
E868926 Orig	0.010	
E868926 Dup	0.007	
E868937 Orig	0.007	
E868937 Dup	0.005	
E868951 Orig	0.044	
E868951 Split	0.045	
E868953 Orig	0.393	
E868953 Dup	0.329	
E868960 Orig	< 0.005	
E868960 Dup	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E868981 Orig	0.060	
E868981 Dup	0.081	
E868988 Orig	0.007	
E868988 Dup	0.009	
E868995 Orig	0.007	
E868995 Dup	0.008	
E882782 Orig	0.028	
E882782 Split	0.027	
E882786 Orig	0.013	
E882786 Dup	0.014	
E882795 Orig	< 0.005	
E882795 Dup	< 0.005	
E882917 Orig	0.005	
E882917 Dup	0.005	
E882924 Orig	< 0.005	
E882924 Dup	< 0.005	
E882935 Orig	0.007	
E882935 Dup	0.009	
E882945 Orig	0.005	
E882945 Split	0.006	
E882951 Orig	< 0.005	
E882951 Dup	< 0.005	
E861203 Orig	0.018	
E861203 Dup	0.016	
E861214 Orig	0.007	
E861214 Dup	0.016	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 26-Sep-18  
**Invoice No.:** A18-13951  
**Invoice Date:** 14-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

338 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-13951**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with loops and is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871739	0.020	
E871740	< 0.005	
E871741	0.040	
E871742	0.014	
E871743	0.025	
E871744	0.009	
E871745	0.009	
E871746	0.010	
E871747	0.008	
E871748	0.008	
E871749	0.009	
E871750	0.550	
E871751	0.010	
E871752	0.016	
E871753	0.516	
E871754	0.081	
E871755	0.029	
E871756	0.021	
E871757	0.027	
E871758	0.239	
E871759	2.19	
E871760	0.006	
E871761	0.027	
E871762	0.013	
E871763	0.019	
E871764	0.021	
E871765	0.009	
E871766	0.014	
E871767	0.037	
E871768	0.025	
E871769	0.031	
E871770	> 10.0	13.1
E871771	0.054	
E871772	0.026	
E871773	0.090	
E871774	0.062	
E871775	0.029	
E871776	0.017	
E871777	0.019	
E871778	0.025	
E871779	0.536	
E871780	0.006	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871781	0.085	
E871782	0.081	
E871783	0.093	
E871784	0.154	
E871785	0.321	
E871786	0.138	
E871787	0.180	
E871788	0.166	
E871789	0.018	
E871790	3.56	
E871791	0.610	
E871792	0.012	
E871793	0.025	
E871794	0.356	
E871795	0.462	
E871796	0.027	
E871797	3.97	
E871798	0.383	
E871799	> 10.0	16.1
E871800	0.030	
E871801	0.708	
E871802	0.016	
E871803	0.015	
E871804	0.020	
E871805	0.034	
E871806	0.030	
E871807	0.126	
E871808	0.009	
E871809	0.017	
E871810	3.57	
E871811	0.080	
E871812	0.008	
E871813	0.026	
E871814	0.059	
E871815	0.047	
E871816	0.115	
E871817	0.036	
E871818	0.017	
E871819	0.017	
E871820	0.006	
E871821	0.032	
E871822	0.106	
E871823	0.079	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871824	0.189	
E871825	0.271	
E871826	0.147	
E871827	0.032	
E871828	0.025	
E871829	0.693	
E871830	7.07	
E871831	0.034	
E871832	0.016	
E871833	0.024	
E871834	0.028	
E871835	0.019	
E871836	0.018	
E871837	0.015	
E871838	2.18	
E871839	0.031	
E871840	0.006	
E871841	0.353	
E871842	0.021	
E871843	0.303	
E871844	0.030	
E871845	0.039	
E871846	0.015	
E871847	0.017	
E871848	0.270	
E871849	0.011	
E871850	0.469	
E871851	0.010	
E871852	0.010	
E871853	0.009	
E871854	0.010	
E871855	0.011	
E871856	0.014	
E871857	0.016	
E871858	0.029	
E871859	0.012	
E871860	0.006	
E871861	0.015	
E871862	0.037	
E871863	0.052	
E871864	0.067	
E871865	0.015	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871866	0.033	
E871867	0.037	
E871868	0.058	
E871869	0.078	
E871870	> 10.0	13.8
E871871	0.011	
E871872	0.061	
E871873	> 10.0	13.0
E871874	0.145	
E871875	1.41	
E871876	0.015	
E871877	0.216	
E871878	0.010	
E871879	0.245	
E871880	0.007	
E871881	0.057	
E871882	> 10.0	22.2
E871883	0.067	
E871884	0.015	
E871885	0.014	
E871886	0.032	
E871887	0.011	
E871888	0.014	
E871889	0.070	
E871890	3.46	
E871891	0.070	
E871892	0.841	
E871893	2.17	
E871894	0.172	
E871895	0.071	
E871896	0.831	
E871897	0.787	
E871898	0.064	
E871899	1.28	
E871900	0.009	
E871901	0.147	
E871902	0.984	
E871903	0.637	
E871904	2.25	
E871905	0.013	
E871906	0.099	
E871907	0.009	
E871908	0.013	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871909	0.013	
E871910	3.51	
E871911	0.129	
E871912	0.024	
E871913	0.719	
E871914	0.018	
E871915	0.144	
E871916	0.012	
E871917	0.011	
E871918	0.038	
E871919	0.015	
E871920	0.007	
E871921	0.024	
E871922	0.196	
E871923	0.015	
E871924	0.048	
E871925	1.20	
E871926	0.040	
E871927	0.012	
E871928	3.72	
E871929	0.777	
E871930	7.01	
E871931	3.62	
E871932	0.013	
E871933	0.133	
E871934	1.16	
E871935	3.36	
E871936	0.466	
E871937	0.102	
E871938	0.018	
E871939	0.499	
E871940	0.008	
E871941	0.028	
E871942	0.010	
E871943	0.010	
E871944	0.018	
E871945	0.009	
E871946	0.011	
E871947	0.010	
E871948	0.020	
E871949	0.014	
E871950	0.487	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871951	0.265	
E871952	0.401	
E871953	3.76	
E871954	0.605	
E871955	0.972	
E871956	2.36	
E871957	2.38	
E871958	0.018	
E871959	0.052	
E871960	0.009	
E871961	0.733	
E871962	0.561	
E871963	0.352	
E871964	0.516	
E871965	0.100	
E871966	0.015	
E871967	7.29	
E871968	0.883	
E871969	3.58	
E871970	> 10.0	13.0
E871971	2.69	
E871972	0.033	
E871973	0.644	
E871974	0.020	
E871975	0.019	
E871976	0.236	
E871977	0.113	
E871978	0.017	
E871979	0.029	
E871980	0.007	
E871981	0.022	
E871982	0.006	
E871983	0.022	
E871984	0.014	
E871985	0.008	
E871986	0.035	
E871987	0.019	
E871988	0.005	
E871989	0.005	
E871990	3.49	
E871991	0.005	
E871992	0.012	
E871993	0.011	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871994	0.012	
E871995	0.012	
E871996	0.037	
E871997	0.026	
E871998	0.017	
E871999	0.014	
E872000	0.008	
E872651	0.048	
E872652	0.187	
E872653	0.016	
E872654	0.014	
E872655	0.012	
E872656	0.010	
E872657	0.013	
E872658	0.014	
E872659	0.012	
E872660	0.007	
E872661	0.011	
E872662	0.012	
E872663	0.012	
E872664	0.012	
E872665	0.013	
E872666	0.015	
E872667	0.030	
E872668	0.098	
E872669	> 10.0	18.5
E872670	> 10.0	13.0
E872671	0.047	
E872672	0.216	
E872673	0.147	
E872674	0.243	
E872675	0.027	
E872676	0.015	
E882953	0.007	
E882954	0.006	
E882955	0.083	
E882956	0.010	
E882957	0.024	
E882958	0.026	
E882959	0.033	
E882960	0.007	
E882961	0.027	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882962	0.013	
E882963	0.015	
E882964	0.009	
E882965	0.011	
E882966	0.010	
E882967	0.009	
E882968	0.010	
E882969	0.022	
E882970	> 10.0	13.1
E882971	0.012	
E882972	0.029	
E882973	0.012	
E882974	0.014	
E882975	0.017	
E882976	0.024	
E882977	0.012	
E882978	0.033	
E882979	0.049	
E882980	< 0.005	
E882981	0.095	
E882982	0.011	
E882983	0.053	
E882984	0.016	
E882985	0.246	
E882986	0.014	
E882987	0.014	
E882988	0.106	
E882989	0.026	
E882990	3.47	
E882991	0.012	
E882992	0.016	
E882993	0.012	
E882994	0.014	
E882995	0.070	
E882996	0.054	
E882997	0.011	
E882998	0.016	
E882999	0.018	
E883000	0.008	
E886636	1.00	
E886637	0.019	
OREAS 214 Meas		3.10
OREAS 214 Cert		3.03

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 216 (Fire Assay) Meas		6.83
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.853	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.62	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
E871739 Orig	0.020	
E871739 Dup	0.015	
E871759 Orig	2.19	
E871759 Dup	1.88	
E871769 Orig	0.031	
E871769 Dup	0.032	
E871788 Orig	0.166	
E871788 Split	0.214	
E871794 Orig	0.356	
E871794 Dup	0.357	
E871806 Orig	0.030	
E871806 Dup	0.028	
E871808 Orig	0.009	
E871808 Dup	0.009	
E871817 Orig	0.036	
E871817 Dup	0.034	
E871828 Orig	0.025	
E871828 Dup	0.029	
E871838 Orig	2.18	
E871838 Split	2.02	
E871838 Split	2.02	
E871857 Orig	0.016	
E871857 Dup	0.017	
E871864 Orig	0.067	
E871864 Dup	0.078	
E871873 Orig		13.0
E871873 Dup		13.7
E871875 Orig	1.41	
E871888 Orig	0.014	
E871888 Split	0.015	
E871891 Orig	0.070	
E871891 Dup	0.080	
E871898 Orig	0.064	
E871898 Dup	0.063	
E871909 Orig	0.013	
E871909 Dup	0.012	
E871921 Orig	0.024	
E871921 Dup	0.023	
E871935 Orig	3.36	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871935 Dup	2.98	
E871938 Orig	0.018	
E871938 Split	0.023	
E871938 Split	0.023	
E871960 Orig	0.009	
E871960 Dup	0.009	
E871967 Orig	7.29	
E871967 Dup	7.86	
E871978 Orig	0.017	
E871978 Dup	0.018	
E871980 Orig	0.007	
E871980 Dup	0.007	
E871984 Orig	0.014	
E871984 Dup	0.017	
E871988 Orig	0.005	
E871988 Split	0.006	
E871999 Orig	0.014	
E871999 Dup	0.015	
E872660 Orig	0.007	
E872660 Dup	0.007	
E872672 Orig	0.216	
E872672 Dup	0.216	
E882962 Orig	0.013	
E882962 Dup	0.015	
E882964 Orig	0.009	
E882964 Split	0.009	
E882972 Orig	0.029	
E882972 Dup	0.023	
E882982 Orig	0.011	
E882982 Dup	0.011	
E882988 Orig	0.106	
E882988 Dup	0.079	
E882989 Orig	0.026	
E882989 Dup	0.031	
E882996 Orig	0.054	
E882996 Dup	0.045	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	0.005	
Method Blank	0.005	
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	



**Date Submitted:** 03-Oct-18  
**Invoice No.:** A18-14373  
**Invoice Date:** 21-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

416 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-14373**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

Emmanuel Esemé , Ph.D.  
Quality Control

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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861229	< 0.005	
E861230	6.97	
E861231	0.099	
E861232	0.018	
E861233	0.010	
E861234	0.005	
E861235	0.028	
E861236	0.008	
E861237	0.007	
E861238	0.005	
E861239	0.005	
E861240	< 0.005	
E861241	0.006	
E861242	0.293	
E861243	0.403	
E861244	0.014	
E861245	0.008	
E861246	0.953	
E861247	0.018	
E861248	0.030	
E861249	0.520	
E861250	0.445	
E861251	0.303	
E861252	0.340	
E861253	0.031	
E861254	0.022	
E861255	0.025	
E861256	0.537	
E861257	0.005	
E861258	0.186	
E861259	0.058	
E861260	0.005	
E861261	0.016	
E861262	0.033	
E861263	0.018	
E861264	0.009	
E861265	0.011	
E861266	0.006	
E861267	0.006	
E861268	0.005	
E861269	0.040	
E861270	> 10.0	12.8

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E861271	0.013	
E861272	0.086	
E861273	0.015	
E861274	0.194	
E861275	0.010	
E861276	0.005	
E861277	0.010	
E861278	0.113	
E861279	0.048	
E861280	< 0.005	
E861281	0.029	
E861282	0.099	
E861283	0.005	
E861284	0.009	
E861285	0.235	
E861286	0.179	
E861287	0.073	
E861288	0.098	
E861289	0.024	
E861290	3.40	
E871017	0.014	
E871018	0.009	
E871019	0.015	
E871020	< 0.005	
E871021	0.006	
E871022	0.005	
E871023	0.005	
E871024	< 0.005	
E871025	0.021	
E871026	0.006	
E871027	0.013	
E871028	0.113	
E871029	0.030	
E871030	6.99	
E871031	0.006	
E871032	< 0.005	
E871033	< 0.005	
E871034	< 0.005	
E871035	0.005	
E871036	0.130	
E871037	0.006	
E871038	0.031	
E871039	0.021	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871040	< 0.005	
E871041	0.418	
E871042	0.037	
E871043	0.012	
E871044	< 0.005	
E871045	0.005	
E871046	< 0.005	
E871047	0.012	
E871048	0.167	
E871049	0.012	
E871050	0.485	
E871051	1.02	
E871052	0.082	
E871053	0.008	
E871054	0.006	
E871055	< 0.005	
E871056	0.008	
E871057	0.005	
E871058	0.006	
E871059	< 0.005	
E871060	< 0.005	
E871061	0.005	
E871062	0.014	
E871063	0.008	
E871064	0.005	
E871065	0.015	
E871066	0.060	
E871067	0.006	
E871068	0.115	
E871069	0.035	
E871070	> 10.0	13.3
E871071	0.009	
E871072	0.021	
E871073	0.038	
E871074	0.014	
E871075	0.855	
E871076	0.100	
E871077	0.013	
E871078	0.094	
E871079	0.021	
E871080	0.005	
E871081	0.221	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871082	0.025	
E871083	0.007	
E871084	0.243	
E871085	0.044	
E871086	0.022	
E871087	0.062	
E871088	0.130	
E871089	5.84	
E871090	3.56	
E871091	0.617	
E871092	0.032	
E871093	1.47	
E871094	0.055	
E871095	0.016	
E871096	0.026	
E871097	0.013	
E871098	0.011	
E871099	0.019	
E871100	< 0.005	
E871101	0.032	
E871102	< 0.005	
E871103	0.008	
E871104	0.007	
E871105	0.036	
E871106	< 0.005	
E871107	< 0.005	
E871108	< 0.005	
E871109	< 0.005	
E871110	3.41	
E871111	< 0.005	
E871112	0.222	
E871113	0.057	
E871114	0.038	
E871115	< 0.005	
E871116	< 0.005	
E871117	0.006	
E871118	< 0.005	
E871119	0.012	
E871120	< 0.005	
E871121	0.142	
E871122	0.023	
E871123	0.009	
E871124	0.007	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871125	0.027	
E871126	0.017	
E871127	0.015	
E871128	0.028	
E871129	0.015	
E871130	6.82	
E871131	0.032	
E871132	0.101	
E871133	0.021	
E871134	0.006	
E871135	0.024	
E871136	1.03	
E871405	0.016	
E871406	2.30	
E871407	0.024	
E871408	0.040	
E871409	0.128	
E871410	3.59	
E871411	0.018	
E871412	0.271	
E871413	6.11	
E871414	5.58	
E871415	0.138	
E871416	0.011	
E871417	0.861	
E871418	> 10.0	16.0
E871419	4.21	
E871420	0.027	
E871421	3.05	
E871422	0.318	
E871423	1.13	
E871424	0.027	
E871425	0.079	
E871426	0.088	
E871427	0.035	
E871428	< 0.005	
E871429	0.108	
E871430	7.06	
E871431	0.017	
E871432	0.041	
E871433	0.050	
E871434	0.013	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871435	0.012	
E871436	< 0.005	
E871437	0.005	
E871438	0.005	
E871439	0.137	
E871440	< 0.005	
E871441	0.008	
E871442	0.146	
E871443	0.799	
E871444	0.410	
E871445	0.134	
E871446	0.014	
E871447	0.095	
E871448	0.029	
E871449	0.074	
E871450	0.514	
E871451	0.029	
E871452	0.011	
E871453	0.015	
E871454	0.040	
E871455	0.010	
E871456	0.238	
E871457	3.95	
E871458	0.806	
E871459	0.857	
E871460	< 0.005	
E871461	0.068	
E871462	4.66	
E871463	0.068	
E871464	0.098	
E871465	0.357	
E871466	0.035	
E871467	0.255	
E871468	0.240	
E872832	0.007	
E872833	0.005	
E872834	< 0.005	
E872835	< 0.005	
E872836	< 0.005	
E872837	< 0.005	
E872838	< 0.005	
E872839	0.007	
E872840	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E872841	< 0.005	
E872842	0.005	
E872843	0.182	
E872844	0.082	
E872845	0.035	
E872846	0.048	
E872847	0.042	
E872848	< 0.005	
E872849	0.010	
E872850	0.474	
E872851	0.011	
E872852	0.042	
E872853	0.006	
E872854	< 0.005	
E872855	< 0.005	
E872856	0.143	
E872857	0.025	
E872858	0.035	
E872859	0.120	
E872860	< 0.005	
E872861	0.019	
E872862	0.028	
E872863	0.010	
E872864	0.019	
E872865	0.058	
E872866	0.024	
E872867	< 0.005	
E872868	0.008	
E872869	0.006	
E872870	> 10.0	13.0
E872871	0.006	
E872872	0.012	
E872873	0.010	
E872874	0.139	
E872875	0.043	
E872876	0.094	
E872877	0.208	
E872878	0.024	
E872879	0.067	
E872880	< 0.005	
E872881	0.176	
E872882	0.010	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E872883	< 0.005	
E872884	< 0.005	
E872885	< 0.005	
E872886	< 0.005	
E872887	0.007	
E872888	< 0.005	
E872889	< 0.005	
E872890	3.41	
E872891	< 0.005	
E872892	< 0.005	
E872893	0.163	
E872894	0.007	
E872895	0.039	
E872896	< 0.005	
E872897	0.009	
E872898	< 0.005	
E872899	0.099	
E872900	< 0.005	
E872901	0.028	
E872902	< 0.005	
E872903	0.044	
E872904	0.025	
E872905	0.073	
E872906	0.094	
E872907	0.086	
E872908	0.008	
E872909	0.027	
E872910	3.46	
E872911	< 0.005	
E872912	0.005	
E872913	< 0.005	
E872914	0.014	
E872915	< 0.005	
E872916	< 0.005	
E872917	0.010	
E872918	< 0.005	
E872919	0.474	
E872920	< 0.005	
E872921	< 0.005	
E872922	< 0.005	
E872923	< 0.005	
E872924	< 0.005	
E872925	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E872926	< 0.005	
E872927	< 0.005	
E872928	< 0.005	
E874102	0.008	
E874103	0.006	
E874104	0.012	
E874105	< 0.005	
E874106	0.005	
E874107	0.010	
E874108	0.011	
E874109	0.008	
E874110	3.51	
E874111	0.018	
E874112	0.032	
E874113	0.025	
E874114	1.04	
E874115	0.043	
E874116	0.049	
E874117	0.029	
E874118	0.092	
E874119	0.030	
E874120	< 0.005	
E874121	0.013	
E874122	0.168	
E874123	0.022	
E874124	0.012	
E874125	0.013	
E874126	0.008	
E874127	0.011	
E874128	0.010	
E874129	0.027	
E874130	6.89	
E874131	0.012	
E874132	0.165	
E874133	0.014	
E874134	0.362	
E874135	1.54	
E874136	0.018	
E874137	0.006	
E874138	0.019	
E874139	0.006	
E874140	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E874141	< 0.005	
E874142	0.008	
E874143	< 0.005	
E874144	0.007	
E874145	0.011	
E874146	0.008	
E874147	0.005	
E874148	2.17	
E874149	0.020	
E874150	0.469	
E874151	0.014	
E874152	0.019	
E874153	0.085	
E874154	0.046	
E874155	1.17	
E874156	9.97	
E874157	0.927	
E874158	0.023	
E874159	0.013	
E874160	< 0.005	
E874161	0.029	
E874162	< 0.005	
E874163	< 0.005	
E874164	< 0.005	
E874165	0.010	
E874166	< 0.005	
E874167	0.021	
E874168	0.017	
E874169	0.066	
E874170	> 10.0	13.2
E874171	4.70	
E874172	< 0.005	
E874173	< 0.005	
E882952	< 0.005	
OREAS 214 Meas		3.02
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.68
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.832	
OREAS 220 (Fire Assay) Cert	0.866	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 220 (Fire Assay) Meas	0.830	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.840	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.828	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.849	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.839	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.851	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.832	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.828	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.835	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.845	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.826	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.842	
OREAS 220 (Fire Assay) Cert	0.866	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.49	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
E861244 Orig	0.014	
E861244 Dup	0.015	
E861251 Orig	0.303	
E861251 Dup	0.325	
E861260 Orig	0.005	
E861260 Dup	< 0.005	
E861262 Orig	0.033	
E861262 Dup	0.035	
E861278 Orig	0.113	
E861278 Split	0.109	
E861282 Orig	0.099	
E861282 Dup	0.095	
E871017 Orig	0.014	
E871017 Dup	0.011	
E871024 Orig	< 0.005	
E871024 Dup	< 0.005	
E871044 Orig	< 0.005	
E871044 Dup	< 0.005	
E871054 Orig	0.006	
E871054 Split	0.007	
E871058 Orig	0.006	
E871058 Dup	0.007	
E871104 Orig	0.007	
E871104 Split	0.019	
E871107 Orig	< 0.005	
E871107 Dup	< 0.005	
E871114 Orig	0.038	
E871114 Dup	0.050	
E871125 Orig	0.027	
E871125 Dup	0.027	
E871409 Orig	0.128	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871409 Dup	0.120	
E871417 Orig	0.861	
E871417 Dup	0.955	
E871422 Orig	0.318	
E871422 Split	0.268	
E871427 Orig	0.035	
E871427 Dup	0.034	
E871429 Orig	0.108	
E871429 Dup	0.084	
E871449 Orig	0.074	
E871449 Dup	0.087	
E871460 Orig	< 0.005	
E871460 Dup	< 0.005	
E872835 Orig	< 0.005	
E872835 Split	< 0.005	
E872841 Orig	< 0.005	
E872841 Dup	< 0.005	
E872848 Orig	< 0.005	
E872848 Dup	< 0.005	
E872876 Orig	0.094	
E872876 Dup	0.063	
E872883 Orig	< 0.005	
E872883 Dup	0.007	
E872885 Orig	< 0.005	
E872885 Split	< 0.005	
E872893 Orig	0.163	
E872893 Dup	0.159	
E872905 Orig	0.073	
E872905 Dup	0.082	
E872914 Orig	0.014	
E872914 Dup	< 0.005	
E872923 Orig	< 0.005	
E872923 Dup	< 0.005	
E874108 Orig	0.011	
E874108 Split	0.025	
E874117 Orig	0.029	
E874117 Dup	0.031	
E874124 Orig	0.012	
E874124 Dup	0.011	
E874135 Dup	1.42	
E874137 Orig	0.006	
E874137 Dup	0.009	
E874158 Orig	0.023	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E874158 Split	0.018	
E874167 Orig	0.021	
E874167 Dup	0.008	
E874171 Orig	4.70	
E874171 Dup	4.77	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
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Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 15-Oct-18  
**Invoice No.:** A18-15029  
**Invoice Date:** 28-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

485 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-15029**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E954033	1.93	
E954034	1.79	
E954035	0.075	
E954036	0.087	
E954037	1.38	
E954038	0.083	
E954039	0.009	
E954040	< 0.005	
E954041	0.203	
E954042	0.206	
E954043	1.44	
E954044	1.99	
E954045	0.010	
E954046	< 0.005	
E954047	0.018	
E954048	0.041	
E954049	< 0.005	
E954050	0.445	
E954051	0.005	
E954052	0.006	
E954053	0.005	
E954054	0.005	
E954055	0.044	
E954056	2.88	
E954057	0.107	
E954058	0.011	
E954059	0.008	
E954060	< 0.005	
E954061	3.62	
E954062	0.196	
E954063	0.027	
E954064	0.554	
E954065	0.949	
E954066	0.016	
E954067	0.315	
E954068	6.44	
E954069	0.031	
E954070	> 10.0	13.8
E952109	< 0.005	
E952110	3.37	
E952111	< 0.005	
E952112	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952113	< 0.005	
E952114	< 0.005	
E952115	< 0.005	
E952116	< 0.005	
E952117	< 0.005	
E952296	< 0.005	
E952297	< 0.005	
E952298	0.182	
E952299	< 0.005	
E952300	< 0.005	
E952301	< 0.005	
E952302	0.131	
E952303	0.016	
E952304	0.042	
E952305	0.015	
E952306	0.017	
E952307	0.018	
E952308	0.320	
E952309	0.098	
E952310	3.41	
E952311	0.116	
E952312	0.005	
E952313	0.007	
E952314	< 0.005	
E952315	< 0.005	
E952316	< 0.005	
E952317	0.005	
E952318	< 0.005	
E952319	< 0.005	
E952320	< 0.005	
E952321	< 0.005	
E952322	< 0.005	
E952323	< 0.005	
E952324	0.007	
E952325	< 0.005	
E952326	< 0.005	
E952327	< 0.005	
E952328	0.011	
E952329	0.048	
E952330	6.88	
E952331	0.030	
E952332	0.015	
E952333	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952334	0.035	
E952335	0.006	
E952336	0.005	
E952337	< 0.005	
E952338	0.010	
E952339	0.009	
E952340	0.015	
E952341	0.376	
E952342	0.063	
E952343	0.041	
E952344	0.164	
E952345	0.035	
E952346	0.441	
E952347	1.54	
E952348	6.87	
E952349	5.89	
E952350	0.490	
E952351	0.006	
E952352	0.752	
E952353	0.925	
E952354	0.793	
E952355	0.013	
E952356	0.010	
E952357	< 0.005	
E952358	0.009	
E952359	0.028	
E952360	< 0.005	
E952361	0.020	
E952362	0.016	
E952363	0.224	
E952364	0.009	
E952365	0.106	
E952366	0.030	
E952367	< 0.005	
E952368	< 0.005	
E882493	0.006	
E882494	0.021	
E882495	0.020	
E882496	< 0.005	
E882497	0.006	
E882498	0.021	
E882499	0.063	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E882500	< 0.005	
E952501	0.163	
E952502	0.015	
E952503	0.741	
E952504	0.445	
E952505	0.006	
E952506	< 0.005	
E952507	< 0.005	
E952508	0.010	
E952509	< 0.005	
E952510	3.40	
E952511	0.058	
E952512	0.005	
E952513	< 0.005	
E952514	0.007	
E952515	0.686	
E952516	0.012	
E952517	0.014	
E952518	0.045	
E952519	0.012	
E952520	0.007	
E952521	0.050	
E952522	0.014	
E952523	0.009	
E952524	0.006	
E952525	0.008	
E952526	0.006	
E952527	0.005	
E952528	< 0.005	
E952529	< 0.005	
E952530	7.11	
E952531	0.050	
E952532	< 0.005	
E952533	0.008	
E952534	< 0.005	
E952535	< 0.005	
E952184	< 0.005	
E952185	0.010	
E952186	0.039	
E952187	0.086	
E952188	0.720	
E952189	0.071	
E952190	3.47	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952191	0.013	
E952192	0.005	
E952193	< 0.005	
E952194	< 0.005	
E952195	0.037	
E952196	< 0.005	
E952197	< 0.005	
E952198	< 0.005	
E952199	< 0.005	
E952200	< 0.005	
E952201	< 0.005	
E952202	< 0.005	
E952203	< 0.005	
E952204	< 0.005	
E952205	0.007	
E952206	0.015	
E952207	< 0.005	
E952208	< 0.005	
E952209	0.005	
E952210	3.48	
E952211	0.007	
E952212	0.139	
E952213	5.68	
E952214	0.450	
E952215	0.017	
E952216	0.055	
E952217	0.058	
E952218	0.373	
E952219	0.824	
E952220	< 0.005	
E952221	0.077	
E952222	0.073	
E952223	0.280	
E952224	0.150	
E952225	0.083	
E952226	6.49	
E952227	0.020	
E952228	0.082	
E952229	8.06	19.3
E952230	6.93	
E952231	7.29	
E952232	7.24	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952233	< 0.005	
E952234	4.33	
E952235	1.11	
E952236	0.154	
E952237	0.300	
E952238	0.007	
E952239	0.005	
E952240	< 0.005	
E952241	< 0.005	
E952242	< 0.005	
E952243	0.018	
E952244	0.019	
E952245	0.049	
E871239	0.005	
E871240	< 0.005	
E871241	< 0.005	
E871242	0.005	
E871243	0.006	
E871244	< 0.005	
E871245	0.035	
E871246	0.301	
E871247	0.059	
E871248	< 0.005	
E871249	0.257	
E871250	0.452	
E871251	0.109	
E871252	0.033	
E871253	0.007	
E871254	0.010	
E871255	0.010	
E871256	< 0.005	
E871257	< 0.005	
E871258	< 0.005	
E871259	< 0.005	
E871260	< 0.005	
E871261	< 0.005	
E871262	0.007	
E871263	< 0.005	
E871264	< 0.005	
E871265	0.033	
E871266	0.014	
E871267	0.006	
E871268	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871269	< 0.005	
E871270	> 10.0	13.9
E871271	0.011	
E871272	0.006	
E871273	0.005	
E871274	0.005	
E871275	< 0.005	
E871276	< 0.005	
E871277	0.011	
E871278	0.009	
E871279	0.011	
E871280	< 0.005	
E871281	0.005	
E871282	0.085	
E871283	0.006	
E871284	< 0.005	
E871285	< 0.005	
E871286	0.005	
E871287	0.006	
E871288	0.010	
E871289	0.121	
E871290	3.48	
E871291	0.013	
E871292	0.024	
E871293	0.011	
E871294	0.028	
E871295	0.025	
E871296	< 0.005	
E871297	< 0.005	
E871298	< 0.005	
E871299	0.048	
E871300	< 0.005	
E871301	0.186	
E871302	0.178	
E871303	0.056	
E871304	0.166	
E871305	0.028	
E871306	0.048	
E871307	0.107	
E871308	0.013	
E871309	0.009	
E871310	3.39	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871311	< 0.005	
E871312	0.024	
E871313	0.026	
E871314	0.010	
E871315	0.013	
E871316	< 0.005	
E871317	0.009	
E871318	0.782	
E871319	0.009	
E871320	< 0.005	
E871321	0.073	
E871322	0.015	
E871323	0.282	
E871324	0.016	
E871325	0.018	
E871326	0.029	
E871327	0.023	
E871328	0.021	
E871329	0.028	
E871330	7.03	
E871331	0.115	
E871332	0.463	
E871333	4.68	
E871334	2.47	
E871335	0.083	
E871336	0.993	
E871337	0.269	
E871338	1.30	
E871339	0.182	
E871340	< 0.005	
E871341	0.768	
E871342	0.396	
E871343	1.38	
E871344	0.585	
E871345	8.20	
E871346	0.151	
E871347	1.46	
E871348	0.074	
E871349	3.70	
E871350	0.487	
E871351	0.130	
E871352	0.042	
E871353	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871354	0.012	
E871355	0.009	
E871356	0.032	
E871357	0.011	
E871358	0.260	
E871359	3.12	
E871360	< 0.005	
E871361	0.968	
E871362	0.046	
E871363	0.006	
E871364	< 0.005	
E871365	< 0.005	
E871366	0.008	
E871367	0.254	
E871368	0.031	
E871369	0.857	
E871370	> 10.0	12.9
E871371	0.018	
E871372	0.018	
E871373	0.016	
E871374	< 0.005	
E871375	0.010	
E871376	0.011	
E871377	0.013	
E871378	0.007	
E871379	< 0.005	
E871380	< 0.005	
E871381	6.22	
E871382	0.111	
E871383	< 0.005	
E871384	0.028	
E871385	< 0.005	
E871386	< 0.005	
E871387	< 0.005	
E871388	< 0.005	
E871389	0.018	
E871390	3.43	
E871391	< 0.005	
E871392	< 0.005	
E871393	< 0.005	
E871394	0.258	
E871395	0.411	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871396	0.006	
E871397	0.035	
E871398	0.009	
E871399	0.016	
E871400	< 0.005	
E871401	0.037	
E871402	0.013	
E871403	< 0.005	
E871404	< 0.005	
E920185	< 0.005	
E920186	0.018	
E920187	0.030	
E920188	0.012	
E920189	< 0.005	
E920190	3.42	
E920191	0.023	
E920192	0.010	
E920193	< 0.005	
E920194	0.019	
E920195	0.039	
E920196	0.258	
E920197	0.410	
E920198	0.410	
E920199	1.60	
E920200	< 0.005	
E920201	0.011	
E920202	< 0.005	
E920203	< 0.005	
E920204	0.019	
E920205	0.018	
E920206	0.034	
E920207	0.073	
E920208	0.015	
E920209	0.024	
E920210	3.41	
E920211	< 0.005	
E920212	1.13	
E920213	0.174	
E920214	0.989	
E920215	0.443	
E920216	0.062	
E920217	0.006	
E920218	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E920219	< 0.005	
E920220	< 0.005	
E920221	< 0.005	
E920222	< 0.005	
E920223	0.128	
E920224	0.013	
E920225	< 0.005	
E920226	< 0.005	
E920227	< 0.005	
E920228	< 0.005	
E920229	0.014	
E920230	7.04	
E920231	< 0.005	
E920232	< 0.005	
E920233	< 0.005	
E920234	< 0.005	
E920235	0.061	
E920236	0.025	
E920237	< 0.005	
E920238	0.010	
E920239	< 0.005	
E920240	< 0.005	
E920241	0.081	
E920242	4.86	
E920243	0.062	
E920244	0.084	
E920245	< 0.005	
E920246	< 0.005	
E920247	< 0.005	
E920248	< 0.005	
E920249	< 0.005	
E920250	0.511	
E920251	< 0.005	
E920252	0.175	
E920253	< 0.005	
E920254	< 0.005	
E920255	< 0.005	
E950564	< 0.005	
E950565	< 0.005	
E950566	< 0.005	
E950567	< 0.005	
E950568	0.015	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E950569	< 0.005	
E950570	> 10.0	13.6
E950571	< 0.005	
E950572	0.051	
E950573	0.388	
E950574	4.59	
E950575	0.023	
E950576	< 0.005	
E950577	< 0.005	
E950578	1.09	
E950579	0.007	
E950580	< 0.005	
E950581	2.99	
E950582	7.09	
E950583	1.31	
E950584	3.24	
E950585	0.681	
E950586	0.024	
OREAS 214 Meas		2.84
OREAS 214 Cert		3.03
OREAS 214 Meas		3.03
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.76
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.70
OREAS 216 (Fire Assay) Cert		6.66
OREAS 220 (Fire Assay) Meas	0.845	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.835	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.830	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.840	
OREAS 220 (Fire Assay) Cert	0.866	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 220 (Fire Assay) Meas	0.858	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.861	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.897	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.826	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 209 (Fire Assay) Meas	1.56	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 209 (Fire Assay) Meas	1.49	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.54	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.57	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
E954048 Orig	0.041	
E954048 Dup	0.015	
E954055 Orig	0.044	
E954055 Dup	0.035	
E954066 Orig	0.016	
E954066 Dup	0.016	
E952298 Orig	0.182	
E952298 Split	0.221	
E952305 Orig	0.015	
E952305 Dup	0.020	
E952316 Orig	< 0.005	
E952316 Dup	< 0.005	
E952333 Orig	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952333 Dup	0.007	
E952340 Orig	0.015	
E952340 Dup	0.016	
E952348 Orig	6.87	
E952348 Split	6.43	
E952351 Orig	0.006	
E952351 Dup	0.006	
E952362 Orig	0.016	
E952362 Dup	0.011	
E882495 Orig	0.020	
E882495 Dup	0.023	
E952504 Orig	0.445	
E952504 Dup	0.469	
E952511 Orig	0.058	
E952511 Dup	0.056	
E952522 Orig	0.014	
E952522 Split	0.011	
E952531 Orig	0.050	
E952531 Dup	0.043	
E952189 Orig	0.071	
E952189 Dup	0.093	
E952193 Orig	< 0.005	
E952193 Dup	0.005	
E952213 Orig	5.68	
E952213 Dup	6.41	
E952221 Orig	0.077	
E952221 Split	0.084	
E952228 Orig	0.082	
E952242 Orig	< 0.005	
E952242 Dup	< 0.005	
E871242 Orig	0.005	
E871242 Dup	< 0.005	
E871253 Orig	0.007	
E871253 Dup	0.007	
E871263 Orig	< 0.005	
E871263 Split	< 0.005	
E871269 Orig	< 0.005	
E871269 Dup	< 0.005	
E871276 Orig	< 0.005	
E871276 Dup	< 0.005	
E871287 Orig	0.006	
E871287 Dup	0.007	
E871304 Orig	0.166	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871304 Dup	0.124	
E871311 Orig	< 0.005	
E871311 Dup	0.021	
E871313 Orig	0.026	
E871313 Split	0.026	
E871321 Orig	0.073	
E871321 Dup	0.087	
E871333 Orig	4.68	
E871333 Dup	4.72	
E871342 Orig	0.396	
E871342 Dup	0.354	
E871346 Orig	0.151	
E871346 Dup	0.135	
E871362 Orig	0.046	
E871362 Dup	0.050	
E871363 Orig	0.006	
E871363 Split	0.009	
E871377 Orig	0.013	
E871377 Dup	0.006	
E871388 Orig	< 0.005	
E871388 Dup	< 0.005	
E871402 Orig	0.013	
E871402 Dup	0.013	
E920191 Orig	0.023	
E920191 Dup	0.012	
E920193 Orig	< 0.005	
E920193 Split	< 0.005	
E920199 Orig	1.60	
E920199 Dup	1.49	
E920221 Orig	< 0.005	
E920221 Dup	0.005	
E920228 Orig	< 0.005	
E920228 Dup	< 0.005	
E920239 Orig	< 0.005	
E920239 Dup	< 0.005	
E920243 Orig	0.062	
E920243 Split	0.093	
E950568 Orig	0.015	
E950568 Dup	< 0.005	
E950579 Orig	0.007	
E950579 Dup	0.025	
Method Blank	< 0.005	





**Date Submitted:** 15-Oct-18  
**Invoice No.:** A18-15030  
**Invoice Date:** 26-Nov-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

463 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-15030**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871469	0.176	
E871470	> 10.0	13.2
E871471	0.034	
E871472	0.019	
E871473	0.017	
E871474	0.038	
E871475	0.054	
E871476	0.035	
E871477	0.124	
E871478	0.088	
E871479	0.099	
E871480	< 0.005	
E871481	0.011	
E871482	< 0.005	
E871483	< 0.005	
E871484	< 0.005	
E871485	0.006	
E871486	< 0.005	
E871487	< 0.005	
E871488	< 0.005	
E871489	0.045	
E871490	3.39	
E871491	< 0.005	
E871492	< 0.005	
E871493	0.007	
E871494	< 0.005	
E872929	0.005	
E872930	7.09	
E872931	0.005	
E872932	0.007	
E872933	0.061	
E872934	0.007	
E872935	0.008	
E872936	0.005	
E872937	< 0.005	
E872938	0.005	
E872939	0.010	
E872940	< 0.005	
E872941	0.012	
E872942	0.015	
E872943	0.008	
E872944	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E872945	0.009	
E872946	0.005	
E872947	0.005	
E872948	< 0.005	
E872949	0.005	
E872950	0.448	
E872951	0.005	
E872952	0.005	
E872953	0.005	
E872954	0.005	
E872955	0.005	
E872956	0.010	
E872957	0.012	
E872958	0.006	
E872959	0.009	
E872960	0.014	
E872961	0.007	
E872962	0.005	
E872963	0.005	
E872964	0.005	
E872965	0.010	
E872966	< 0.005	
E872967	< 0.005	
E872968	< 0.005	
E872969	> 10.0	11.9
E872970	> 10.0	13.0
E872971	0.012	
E872972	< 0.005	
E872973	0.015	
E872974	0.016	
E872975	0.029	
E872976	2.34	
E872977	0.005	
E872978	< 0.005	
E872979	0.005	
E872980	< 0.005	
E872981	0.005	
E872982	0.008	
E872983	0.059	
E872984	0.253	
E872985	0.688	
E872986	0.021	
E872987	0.139	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E872988	0.006	
E872989	0.035	
E872990	3.40	
E872991	0.077	
E872992	0.032	
E872993	0.042	
E872994	0.378	
E872995	0.448	
E872996	0.060	
E872997	0.373	
E872998	0.014	
E872999	0.038	
E873000	< 0.005	
E952001	0.184	
E952002	0.006	
E952003	0.006	
E952004	0.005	
E952005	0.005	
E952006	0.007	
E952007	0.008	
E952008	0.009	
E952009	0.011	
E952010	3.55	
E952011	0.008	
E952012	0.007	
E952013	0.011	
E952014	0.013	
E952015	0.005	
E952016	0.039	
E952017	0.005	
E952018	0.015	
E952019	< 0.005	
E952020	< 0.005	
E952021	0.006	
E952022	0.019	
E952023	0.010	
E952024	0.006	
E952025	< 0.005	
E952026	< 0.005	
E952027	0.016	
E952028	< 0.005	
E952029	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952030	6.97	
E952031	0.889	
E952032	0.005	
E952033	0.008	
E952034	0.008	
E952035	0.083	
E952036	0.019	
E952037	0.182	
E952038	0.052	
E952039	0.085	
E952040	< 0.005	
E952041	0.036	
E952042	0.150	
E952043	0.046	
E952044	0.029	
E952045	0.137	
E952046	0.123	
E952047	2.83	
E952048	> 10.0	13.4
E952049	> 10.0	23.2
E952050	0.496	
E952051	0.028	
E952052	0.048	
E952053	> 10.0	14.8
E952054	0.039	
E952055	1.07	
E952056	8.02	
E952057	4.74	
E952058	3.13	
E952059	0.520	
E952060	< 0.005	
E952061	0.008	
E952062	0.021	
E952063	0.007	
E952064	0.005	
E952065	< 0.005	
E952066	< 0.005	
E952067	< 0.005	
E952068	< 0.005	
E952069	< 0.005	
E952070	> 10.0	13.1
E952071	< 0.005	
E952072	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952073	< 0.005	
E952074	< 0.005	
E952075	0.005	
E952076	0.006	
E952077	0.006	
E952078	0.064	
E952079	0.008	
E952080	< 0.005	
E952081	0.532	
E952082	0.009	
E952083	0.007	
E952084	0.019	
E952085	< 0.005	
E952086	< 0.005	
E952087	< 0.005	
E952088	< 0.005	
E952089	< 0.005	
E952090	3.43	
E952091	0.005	
E952092	< 0.005	
E952093	0.106	
E952094	0.008	
E952095	0.144	
E952096	0.011	
E952097	0.096	
E952098	0.143	
E952099	0.015	
E952100	< 0.005	
E952101	< 0.005	
E952102	1.43	
E952103	0.021	
E952104	0.045	
E952105	0.093	
E952106	0.009	
E952107	< 0.005	
E952108	0.030	
E952118	< 0.005	
E952119	0.006	
E952120	< 0.005	
E952121	0.007	
E952122	0.180	
E952123	0.155	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952124	0.278	
E952125	0.560	
E952126	0.090	
E952127	0.045	
E952128	0.029	
E952129	0.005	
E952130	7.20	
E952131	0.011	
E952132	0.006	
E952133	0.016	
E952134	< 0.005	
E952135	< 0.005	
E952136	0.006	
E952137	< 0.005	
E952138	< 0.005	
E952139	< 0.005	
E952140	< 0.005	
E952141	< 0.005	
E952142	< 0.005	
E952143	0.009	
E952144	0.014	
E952145	< 0.005	
E952146	< 0.005	
E952147	< 0.005	
E952148	0.007	
E952149	0.016	
E952150	0.478	
E952151	< 0.005	
E952152	< 0.005	
E952153	0.005	
E952154	0.011	
E952155	0.005	
E952156	0.015	
E952157	0.044	
E952158	0.015	
E952159	< 0.005	
E952160	< 0.005	
E952161	0.010	
E952162	0.006	
E952163	0.012	
E952164	0.080	
E952165	0.068	
E952166	0.181	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952167	0.032	
E952168	0.011	
E952169	0.056	
E952170	> 10.0	12.9
E952171	0.072	
E952172	4.25	
E952173	0.041	
E952174	0.020	
E952175	0.049	
E952176	0.012	
E952177	0.259	
E952178	0.074	
E952179	0.052	
E952180	< 0.005	
E952181	0.006	
E952182	0.024	
E952183	0.019	
E952246	< 0.005	
E952247	0.006	
E952248	0.013	
E952249	0.007	
E952250	0.532	
E952251	0.071	
E952252	0.007	
E952253	0.035	
E952254	< 0.005	
E952255	0.123	
E952256	< 0.005	
E952257	0.027	
E952258	0.006	
E952259	0.016	
E952260	< 0.005	
E952261	0.007	
E952262	< 0.005	
E952263	0.006	
E952264	0.007	
E952265	0.009	
E952266	0.022	
E952267	0.085	
E952268	0.085	
E952269	0.105	
E952270	> 10.0	11.5

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952271	0.036	
E952272	0.070	
E952273	0.047	
E952274	0.321	
E952275	0.047	
E952276	0.008	
E952277	0.026	
E952278	0.224	
E952279	0.194	
E952280	< 0.005	
E952281	4.95	
E952282	0.368	
E952283	0.035	
E952284	0.013	
E952285	0.012	
E952286	0.026	
E952287	0.020	
E952288	0.020	
E952289	0.012	
E952290	3.45	
E952291	0.010	
E952292	< 0.005	
E952293	< 0.005	
E952294	< 0.005	
E952295	0.024	
E871137	0.025	
E871138	0.328	
E871139	0.017	
E871140	< 0.005	
E871141	0.021	
E871142	0.005	
E871143	0.021	
E871144	0.654	
E871145	5.03	
E871146	0.349	
E871147	0.017	
E871148	0.015	
E871149	0.023	
E871150	0.552	
E871151	0.074	
E871152	0.250	
E871153	0.130	
E871154	1.49	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871155	0.040	
E871156	< 0.005	
E871157	< 0.005	
E871158	0.179	
E871159	0.018	
E871160	< 0.005	
E871161	0.104	
E871162	0.134	
E871163	0.344	
E871164	0.089	
E871165	0.034	
E871166	0.054	
E871167	0.281	
E871168	0.178	
E871169	1.94	
E871170	> 10.0	13.0
E871171	0.516	
E871172	4.98	
E871173	2.51	
E871174	3.11	
E871175	> 10.0	36.9
E871176	0.236	
E871177	0.025	
E871178	5.92	
E871179	0.223	
E871180	0.007	
E871181	0.062	
E871182	5.21	
E871183	0.019	
E871184	0.032	
E871185	0.023	
E871186	0.033	
E871187	0.006	
E871188	0.021	
E871189	0.009	
E871190	3.50	
E871191	0.011	
E871192	0.016	
E871193	1.25	
E871194	0.118	
E871195	0.256	
E871196	0.801	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871197	0.082	
E871198	0.082	
E871199	0.030	
E871200	< 0.005	
E871201	0.032	
E871202	0.019	
E871203	0.031	
E871204	0.060	
E871205	0.033	
E871206	0.027	
E871207	0.038	
E871208	0.059	
E871209	0.156	
E871210	3.42	
E871211	0.140	
E871212	0.092	
E871213	0.112	
E871214	0.425	
E871215	0.030	
E871216	0.053	
E871217	0.209	
E871218	0.028	
E871219	0.052	
E871220	0.009	
E871221	0.027	
E871222	0.051	
E871223	0.035	
E871224	0.016	
E871225	0.025	
E871226	0.016	
E871227	0.013	
E871228	0.041	
E871229	0.060	
E871230	7.16	
E871231	0.051	
E871232	< 0.005	
E871233	< 0.005	
E871234	< 0.005	
E871235	0.012	
E871236	< 0.005	
E871237	< 0.005	
E871238	0.005	
E860494	0.021	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E860495	0.015	
E860496	0.008	
E860497	0.006	
E860498	0.007	
E860499	0.017	
E860500	< 0.005	
E954001	0.006	
E954002	0.008	
E954003	0.031	
E954004	0.861	
E954005	0.064	
E954006	0.053	
E954007	0.137	
E954008	0.307	
E954009	5.03	
E954010	3.43	
E954011	0.420	
E954012	0.962	
E954013	0.015	
E954014	0.022	
E954015	0.017	
E954016	0.010	
E954017	0.026	
E954018	0.034	
E954019	0.025	
E954020	0.007	
E954021	0.031	
E954022	0.031	
E954023	2.88	
E954024	0.050	
E954025	0.072	
E954026	0.032	
E954027	0.761	
E954028	0.022	
E954029	0.037	
E954030	6.95	
E954031	0.068	
E954032	0.493	
OREAS 216 (Fire Assay) Meas		6.69
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire		6.96

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Meas		
OREAS 216 (Fire Assay) Cert		6.66
OREAS 254 Meas	2.42	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.45	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.51	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.53	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.58	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.46	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.44	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.48	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.57	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.50	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.58	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.58	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.52	
OREAS 254 Cert	2.55	
OREAS 254 Meas	2.49	
OREAS 254 Cert	2.55	
OREAS 215 (Fire Assay) Meas	3.47	
OREAS 215 (Fire Assay) Cert	3.54	
OREAS 257 Meas		14.1
OREAS 257 Cert		14.18
OREAS 257 Meas		14.4
OREAS 257 Cert		14.18
Oreas 221 (Fire Assay) Meas	1.03	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire	1.04	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Meas		
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	0.995	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.05	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.03	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.05	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.05	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.02	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.05	
Oreas 221 (Fire Assay) Cert	1.06	
E871488 Orig	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E871488 Dup	< 0.005	
E872932 Orig	0.007	
E872932 Dup	0.007	
E872951 Orig	0.005	
E872951 Dup	< 0.005	
E872952 Orig	0.005	
E872952 Split	0.005	
E872960 Orig	0.014	
E872960 Dup	< 0.005	
E872971 Orig	0.012	
E872971 Dup	0.010	
E872984 Orig	0.253	
E872984 Dup	0.235	
E872993 Orig	0.042	
E872993 Dup	0.042	
E952002 Orig	0.006	
E952002 Split	0.007	
E952003 Orig	0.006	
E952003 Dup	< 0.005	
E952015 Orig	0.005	
E952015 Dup	0.005	
E952025 Orig	< 0.005	
E952025 Dup	< 0.005	
E952035 Orig	0.083	
E952035 Dup	0.057	
E952052 Orig	0.048	
E952052 Split	0.049	
E952056 Orig	8.02	
E952056 Dup	9.19	
E952060 Orig	< 0.005	
E952060 Dup	0.005	
E952074 Orig	< 0.005	
E952074 Dup	< 0.005	
E952084 Orig	0.019	
E952084 Dup	0.011	
E952094 Orig	0.008	
E952094 Dup	0.007	
E952102 Orig	1.43	
E952102 Split	1.56	
E952103 Orig	0.021	
E952103 Dup	0.023	
E952127 Orig	0.045	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952127 Dup	0.065	
E952137 Orig	< 0.005	
E952137 Dup	0.007	
E952147 Orig	< 0.005	
E952147 Dup	< 0.005	
E952161 Orig	0.010	
E952161 Split	< 0.005	
E952171 Orig	0.072	
E952171 Dup	0.023	
E952181 Orig	0.006	
E952181 Dup	0.008	
E952258 Orig	0.006	
E952258 Dup	0.006	
E952268 Orig	0.085	
E952268 Dup	0.093	
E952273 Orig	0.047	
E952273 Split	0.045	
E952277 Orig	0.026	
E952277 Dup	0.040	
E952295 Orig	0.024	
E952295 Dup	0.023	
E871147 Orig	0.017	
E871147 Dup	0.014	
E871157 Orig	< 0.005	
E871157 Dup	< 0.005	
E871164 Orig	0.089	
E871164 Split	0.081	
E871171 Orig	0.516	
E871171 Dup	0.445	
E871179 Orig	0.223	
E871179 Dup	0.246	
E871202 Orig	0.019	
E871202 Dup	0.016	
E871212 Orig	0.092	
E871212 Dup	0.095	
E871214 Orig	0.425	
E871214 Split	0.442	
E871221 Orig	0.027	
E871221 Dup	0.035	
E871236 Orig	< 0.005	
E871236 Dup	< 0.005	
E954001 Orig	0.006	
E954001 Dup	0.009	





**Date Submitted:** 29-Oct-18  
**Invoice No.:** A18-16031  
**Invoice Date:** 14-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

396 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Tbay Au - Fire Assay AA

REPORT **A18-16031**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized and somewhat cursive.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952369	0.023	
E952370	> 10.0	13.0
E952371	0.020	
E952372	0.085	
E952373	0.016	
E952374	0.006	
E952375	0.011	
E952376	0.096	
E952377	0.005	
E952378	0.016	
E952379	< 0.005	
E952380	0.006	
E952381	0.006	
E952382	0.016	
E952383	0.005	
E952384	0.005	
E952385	< 0.005	
E952386	< 0.005	
E952387	0.009	
E952388	< 0.005	
E952389	< 0.005	
E952390	3.47	
E952391	0.011	
E952392	0.034	
E952393	0.048	
E952394	0.034	
E952395	0.007	
E952396	< 0.005	
E952397	< 0.005	
E952398	< 0.005	
E952399	< 0.005	
E952400	< 0.005	
E952401	< 0.005	
E952402	< 0.005	
E952403	0.006	
E952404	< 0.005	
E952405	< 0.005	
E952406	0.010	
E952407	0.006	
E952408	0.006	
E952409	0.005	
E952410	3.53	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952411	0.006	
E952412	0.059	
E952413	0.011	
E952414	0.008	
E952415	0.013	
E952416	0.009	
E952417	< 0.005	
E952418	0.005	
E952419	0.058	
E952420	< 0.005	
E952421	0.006	
E952422	< 0.005	
E952423	0.005	
E952424	0.021	
E952425	0.018	
E952426	0.005	
E952427	< 0.005	
E952428	< 0.005	
E952429	< 0.005	
E952430	7.05	
E952431	0.005	
E952432	< 0.005	
E952433	< 0.005	
E952434	< 0.005	
E952435	0.005	
E952436	0.005	
E952437	< 0.005	
E952438	0.011	
E952439	0.006	
E952440	< 0.005	
E952441	< 0.005	
E952442	< 0.005	
E952443	0.007	
E952444	0.006	
E952445	< 0.005	
E952446	0.008	
E952447	< 0.005	
E952448	0.005	
E952449	< 0.005	
E952450	0.479	
E952451	0.007	
E952452	0.005	
E952453	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952454	0.005	
E952455	0.008	
E952456	0.005	
E952457	0.005	
E952458	0.006	
E952459	< 0.005	
E952460	0.005	
E952461	< 0.005	
E952462	< 0.005	
E952463	0.005	
E952464	0.008	
E952465	0.009	
E952466	0.006	
E952467	0.030	
E952468	< 0.005	
E952469	< 0.005	
E952470	> 10.0	12.9
E952471	0.015	
E952472	0.215	
E952473	0.009	
E952474	0.006	
E952475	< 0.005	
E952476	< 0.005	
E952477	< 0.005	
E952478	0.006	
E952479	< 0.005	
E952480	< 0.005	
E952481	0.011	
E952482	< 0.005	
E952483	0.006	
E952484	0.008	
E952485	0.083	
E952486	0.006	
E952487	0.071	
E952488	0.021	
E952489	0.015	
E952490	3.41	
E952491	0.037	
E952492	0.006	
E952493	0.009	
E952494	0.006	
E952495	0.006	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952496	0.007	
E952497	0.006	
E952498	0.007	
E952499	0.025	
E952500	< 0.005	
E952536	< 0.005	
E952537	0.137	
E952538	0.875	
E952539	0.191	
E952540	< 0.005	
E952541	0.110	
E952542	0.011	
E952543	0.015	
E952544	0.032	
E952545	0.031	
E952546	0.023	
E952547	0.019	
E952548	0.041	
E952549	0.025	
E952550	0.486	
E952551	0.036	
E952552	0.011	
E952553	0.032	
E952554	0.159	
E952555	0.165	
E952556	2.13	
E952557	0.306	
E952558	0.062	
E952559	0.046	
E952560	< 0.005	
E952561	0.047	
E952562	0.094	
E952563	1.27	
E952564	0.039	
E952565	0.041	
E952566	1.75	
E952567	0.011	
E952568	0.012	
E952569	0.008	
E952570	> 10.0	13.1
E952571	0.128	
E952572	0.013	
E952573	9.23	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952574	> 10.0	17.2
E952575	0.050	
E952576	0.016	
E955841	2.49	
E955842	0.029	
E955843	0.025	
E955844	0.008	
E955845	0.011	
E955846	0.011	
E955847	0.045	
E955848	0.337	
E955849	1.39	
E955850	0.434	
E955851	0.177	
E955852	0.018	
E955853	0.017	
E955854	0.067	
E955855	0.032	
E955856	0.013	
E955857	0.316	
E955858	1.50	
E955859	> 10.0	14.6
E955860	< 0.005	
E955861	0.930	
E955862	0.015	
E955863	0.169	
E955864	> 10.0	17.0
E955865	0.448	
E955866	> 10.0	35.7
E955867	0.061	
E955868	0.510	
E955869	3.97	
E955870	> 10.0	13.0
E955871	2.80	
E955872	1.57	
E955873	0.008	
E955874	0.018	
E955875	0.021	
E955876	0.011	
E955877	5.79	
E955878	3.73	
E955879	0.097	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E955880	< 0.005	
E955881	0.659	
E955882	0.010	
E955883	0.014	
E955884	0.045	
E955885	0.081	
E955886	0.009	
E955887	0.016	
E955888	0.157	
E955889	0.302	
E955890	3.47	
E955891	0.012	
E955892	0.012	
E955893	0.005	
E955894	0.007	
E955895	0.008	
E955896	0.036	
E955897	0.124	
E955898	> 10.0	14.9
E955899	0.020	
E955900	< 0.005	
E955901	8.63	
E955902	0.956	
E955903	1.66	
E955904	1.17	
E955905	1.67	
E955906	> 10.0	14.8
E955907	1.61	
E955908	0.369	
E955909	3.75	
E955910	3.44	
E955911	0.069	
E955912	0.144	
E955913	0.065	
E955914	0.223	
E955915	0.255	
E955916	0.506	
E955917	0.010	
E955918	0.008	
E955919	0.056	
E955920	< 0.005	
E955921	0.009	
E955922	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E955923	< 0.005	
E955924	0.166	
E955925	0.758	
E955926	0.013	
E955927	< 0.005	
E955928	< 0.005	
E955929	< 0.005	
E955930	7.02	
E955931	< 0.005	
E955932	0.005	
E955933	0.007	
E955934	0.024	
E955935	0.005	
E955936	< 0.005	
E955937	< 0.005	
E955938	< 0.005	
E955939	0.005	
E955940	< 0.005	
E955941	< 0.005	
E955942	< 0.005	
E955943	< 0.005	
E955944	< 0.005	
E955945	< 0.005	
E955946	< 0.005	
E955947	< 0.005	
E955948	< 0.005	
E955949	0.006	
E955950	0.511	
E955951	0.006	
E955952	< 0.005	
E955953	0.005	
E955954	< 0.005	
E955955	0.007	
E955956	0.005	
E955957	0.005	
E955958	< 0.005	
E955959	< 0.005	
E955960	< 0.005	
E955961	< 0.005	
E955962	0.006	
E955963	0.021	
E955964	0.018	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E955965	0.009	
E955966	0.007	
E955967	0.006	
E955968	0.012	
E955969	0.022	
E955970	> 10.0	12.8
E955971	0.079	
E955972	0.056	
E955973	0.021	
E955974	< 0.005	
E955975	0.031	
E955976	0.005	
E955977	0.032	
E955978	0.005	
E955979	0.059	
E955980	< 0.005	
E955981	0.006	
E955982	0.012	
E955983	0.019	
E955984	0.007	
E955985	0.029	
E955986	0.013	
E955987	< 0.005	
E955988	0.005	
E955989	0.012	
E955990	3.57	
E955991	< 0.005	
E955992	< 0.005	
E955993	0.005	
E955994	0.017	
E955995	0.006	
E955996	0.006	
E955997	< 0.005	
E955998	0.065	
E955999	0.067	
E956000	< 0.005	
E956001	0.010	
E956002	< 0.005	
E956003	0.007	
E956004	0.009	
E956005	0.010	
E956006	0.034	
E956007	0.014	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E956008	< 0.005	
E956009	< 0.005	
E956010	3.37	
E956011	0.017	
E956012	0.869	
E956013	0.011	
E956014	< 0.005	
E956015	0.014	
E956016	0.011	
E956017	0.008	
E956018	< 0.005	
E956019	0.006	
E956020	< 0.005	
E956021	0.067	
E956022	0.077	
E956023	0.105	
E956024	0.022	
E956025	0.039	
E956026	0.029	
E956027	0.042	
E956028	0.234	
E956029	0.005	
E956030	7.01	
E956031	< 0.005	
E956032	< 0.005	
E956033	< 0.005	
E956034	0.005	
E956035	0.019	
E956036	0.007	
E956037	0.014	
E956038	0.051	
E956039	0.090	
E956040	< 0.005	
E956041	0.011	
E956042	0.032	
E956043	0.142	
E956044	0.024	
E956045	0.021	
E962001	1.84	
E962002	0.380	
E962003	0.034	
E962004	0.108	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962005	0.025	
E962006	0.015	
E962007	0.017	
E962008	0.068	
E962009	0.134	
E962010	3.50	
E962011	0.013	
E962012	0.059	
E962013	0.848	
E962014	0.029	
E962015	0.018	
E962016	0.022	
E962017	0.008	
E962018	0.008	
OREAS 216 (Fire Assay) Meas		6.47
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.522	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.513	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.515	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.509	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.509	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.518	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.508	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.514	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.504	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.511	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.512	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.508	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.513	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 218 Cert	0.531	
Oreas 221 (Fire Assay) Meas	1.02	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.02	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.03	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.01	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.03	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.01	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.04	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	0.994	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.01	
Oreas 221 (Fire Assay) Cert	1.06	
Oreas 221 (Fire Assay) Meas	1.01	
Oreas 221 (Fire Assay) Cert	1.06	
OREAS 255 (Fire Assay) Meas		4.07
OREAS 255 (Fire Assay) Cert		4.08

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
E952385 Orig	< 0.005	
E952385 Dup	< 0.005	
E952389 Orig	< 0.005	
E952389 Dup	< 0.005	
E952403 Orig	0.006	
E952403 Dup	0.006	
E952418 Orig	0.005	
E952418 Split	0.006	
E952419 Orig	0.058	
E952419 Dup	0.036	
E952423 Orig	0.005	
E952423 Dup	0.005	
E952437 Orig	< 0.005	
E952437 Dup	< 0.005	
E952447 Orig	< 0.005	
E952447 Dup	0.005	
E952457 Orig	0.005	
E952457 Dup	0.006	
E952467 Orig	0.030	
E952467 Dup	0.029	
E952468 Orig	< 0.005	
E952468 Split	0.005	
E952481 Orig	0.011	
E952481 Dup	0.009	
E952491 Orig	0.037	
E952491 Dup	0.033	
E952536 Orig	< 0.005	
E952536 Dup	0.005	
E952553 Orig	0.032	
E952553 Split	0.026	
E952564 Orig	0.039	
E952564 Dup	0.026	
E952574 Orig	> 10.0	17.2
E952574 Dup	> 10.0	16.8
E955852 Orig	0.018	
E955852 Dup	0.017	
E955863 Orig	0.169	
E955863 Dup	0.111	
E955867 Orig	0.061	
E955867 Split	0.075	
E955883 Orig	0.014	
E955883 Dup	0.016	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 07-Nov-18  
**Invoice No.:** A18-16821  
**Invoice Date:** 21-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

405 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-16821**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962269	0.005	
E962270	> 10.0	13.2
E962271	0.005	
E962272	< 0.005	
E962273	0.034	
E962274	0.268	
E962275	0.008	
E962276	0.007	
E962277	0.011	
E962278	< 0.005	
E962279	0.006	
E962280	< 0.005	
E962281	0.005	
E962282	< 0.005	
E962283	0.009	
E962284	0.014	
E962285	0.008	
E962286	0.006	
E962287	0.006	
E962288	0.027	
E962289	0.028	
E962290	3.40	
E962291	0.007	
E962292	0.006	
E962293	0.006	
E962294	0.007	
E962295	0.008	
E962296	0.007	
E962297	0.009	
E962298	0.021	
E962299	0.334	
E962300	< 0.005	
E962301	0.474	
E962302	0.068	
E962303	0.009	
E962304	0.061	
E962305	0.931	
E962306	0.175	
E962307	0.414	
E962308	0.006	
E962309	0.009	
E962310	3.40	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962311	0.011	
E962312	0.008	
E962313	0.007	
E962314	0.006	
E962315	0.007	
E962316	0.011	
E962317	0.007	
E962318	0.009	
E962319	0.407	
E962320	< 0.005	
E962321	0.010	
E962322	0.019	
E962323	0.015	
E962324	0.023	
E962325	0.014	
E962326	0.052	
E962327	0.009	
E962328	0.524	
E962329	0.045	
E962330	6.95	
E962331	0.062	
E962332	1.46	
E962333	0.025	
E962334	0.011	
E962335	0.012	
E962336	0.008	
E962337	0.012	
E962338	0.147	
E962339	0.045	
E962340	< 0.005	
E962341	0.010	
E962342	0.020	
E962343	0.439	
E962344	0.024	
E962345	0.023	
E962346	0.037	
E962347	0.009	
E962348	0.017	
E962349	0.083	
E962350	0.443	
E962351	0.069	
E962352	5.67	
E962353	0.038	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962354	0.007	
E962355	0.009	
E962356	0.078	
E962357	0.093	
E962358	0.051	
E962359	0.023	
E962360	< 0.005	
E962361	0.021	
E962362	0.033	
E962363	0.183	
E962364	0.023	
E962365	0.081	
E962366	0.013	
E962367	0.010	
E962368	0.007	
E962369	0.016	
E962370	> 10.0	13.5
E962371	0.013	
E962372	2.56	
E962373	0.037	
E962374	0.172	
E962375	0.007	
E962376	0.006	
E962377	< 0.005	
E962378	0.005	
E962379	< 0.005	
E962380	< 0.005	
E962381	0.007	
E962382	0.005	
E962383	0.008	
E962384	0.006	
E962385	0.021	
E962386	0.016	
E962387	0.006	
E962388	0.007	
E962389	0.020	
E962390	3.67	
E962391	0.011	
E962392	0.005	
E962393	< 0.005	
E962394	0.005	
E962395	0.012	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962396	0.014	
E962397	0.007	
E962398	0.024	
E962399	0.146	
E962400	< 0.005	
E962401	0.015	
E962402	< 0.005	
E962403	< 0.005	
E962404	< 0.005	
E962405	< 0.005	
E962406	0.013	
E962407	0.007	
E962408	0.024	
E962409	0.066	
E962410	3.49	
E962411	0.201	
E962412	0.094	
E962413	0.031	
E962414	0.073	
E962415	0.009	
E962416	< 0.005	
E962417	0.011	
E962418	0.022	
E962419	0.024	
E962420	< 0.005	
E962421	0.016	
E962422	0.011	
E962423	0.053	
E962424	0.018	
E962425	0.019	
E962426	0.005	
E962427	0.015	
E962428	0.010	
E962429	0.018	
E962430	6.87	
E962431	0.011	
E962432	< 0.005	
E962433	< 0.005	
E962434	0.010	
E962435	0.011	
E962436	0.008	
E962437	0.008	
E962438	0.109	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962439	0.118	
E962440	< 0.005	
E962441	0.483	
E962442	0.075	
E962443	0.022	
E962444	0.006	
E962445	0.186	
E962446	0.080	
E962447	0.077	
E962448	0.007	
E962449	< 0.005	
E962450	0.493	
E962451	0.006	
E962452	< 0.005	
E962453	< 0.005	
E962454	< 0.005	
E962455	< 0.005	
E962456	< 0.005	
E962457	0.006	
E962458	< 0.005	
E962459	0.007	
E962460	< 0.005	
E962461	< 0.005	
E962462	< 0.005	
E962463	< 0.005	
E962464	< 0.005	
E962465	0.023	
E962466	< 0.005	
E962467	< 0.005	
E962468	< 0.005	
E962469	< 0.005	
E962470	> 10.0	13.8
E962471	0.105	
E962472	< 0.005	
E952977	0.009	
E952978	0.009	
E952979	0.012	
E952980	< 0.005	
E952981	0.011	
E952982	0.008	
E952983	0.011	
E952984	1.86	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E952985	6.74	
E952986	0.059	
E952987	> 10.0	33.3
E952988	0.044	
E952989	0.032	
E952990	3.55	
E952991	0.035	
E952992	0.012	
E952993	0.011	
E952994	0.024	
E952995	0.180	
E952996	0.496	
E952997	0.006	
E952998	< 0.005	
E952999	1.23	
E953000	< 0.005	
E956141	0.014	
E956142	0.035	
E956143	0.053	
E956144	< 0.005	
E956145	0.027	
E956146	0.009	
E956147	0.053	
E956148	0.053	
E956149	0.050	
E956150	0.542	
E956151	0.024	
E956152	0.212	
E956153	5.05	
E956154	0.036	
E956155	0.018	
E956156	0.005	
E956157	0.005	
E956158	< 0.005	
E956159	< 0.005	
E956160	< 0.005	
E956161	< 0.005	
E956162	0.009	
E956163	< 0.005	
E956164	0.118	
E956165	2.55	
E956166	0.011	
E956167	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E956168	< 0.005	
E956169	< 0.005	
E956170	> 10.0	12.9
E956171	0.017	
E956172	< 0.005	
E956173	0.005	
E956174	< 0.005	
E956175	0.016	
E956176	0.010	
E956177	< 0.005	
E956178	< 0.005	
E956179	2.72	
E956180	< 0.005	
E956181	0.016	
E956182	2.31	
E956183	1.20	
E956184	0.059	
E956185	0.011	
E956186	0.012	
E956187	0.021	
E956188	0.011	
E956189	0.011	
E956190	3.53	
E956191	2.92	
E956192	6.58	
E956193	0.745	
E956194	0.732	
E956195	0.655	
E956196	0.185	
E956197	1.20	
E956198	6.79	
E956199	0.033	
E956200	< 0.005	
E956201	0.022	
E956202	0.007	
E956203	0.039	
E956204	< 0.005	
E956205	< 0.005	
E956206	0.005	
E956207	< 0.005	
E956208	< 0.005	
E956209	0.012	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E956210	3.50	
E956211	1.54	
E956212	0.021	
E956213	0.059	
E956214	0.667	
E956215	0.137	
E956216	0.086	
E956217	0.025	
E956218	0.015	
E956219	0.025	
E956220	< 0.005	
E956221	0.015	
E956222	0.019	
E956223	0.082	
E956224	0.028	
E956225	0.017	
E956226	0.017	
E956227	0.028	
E956228	0.012	
E956229	0.006	
E956230	7.22	
E956231	0.010	
E956232	0.055	
E956233	0.039	
E956234	0.018	
E956235	0.017	
E956236	0.033	
E956237	0.327	
E956238	0.010	
E956239	0.013	
E956240	< 0.005	
E956241	0.013	
E956242	0.009	
E956243	0.009	
E956244	0.010	
E956245	0.006	
E956246	< 0.005	
E956247	0.009	
E956248	0.030	
E956249	0.448	
E956250	0.438	
E956251	0.156	
E956252	1.85	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E956253	0.374	
E956254	0.015	
E956255	0.023	
E956256	0.007	
E956257	0.009	
E956258	0.009	
E956259	0.008	
E956260	< 0.005	
E956261	0.007	
E956262	0.034	
E956263	0.011	
E956264	0.007	
E956265	0.009	
E956266	0.011	
E956267	0.018	
E956268	0.009	
E956269	0.018	
E956270	> 10.0	13.6
E956271	0.020	
E956272	0.016	
E956273	0.013	
E956274	0.018	
E956275	0.036	
E956276	0.028	
E956277	0.018	
E956278	0.023	
E956279	0.018	
E956280	< 0.005	
E956281	0.033	
E956282	0.009	
E956283	0.025	
E956284	0.011	
E956285	0.005	
E956286	0.176	
E956287	0.013	
E956288	0.093	
E956289	0.026	
E956290	3.45	
E956291	0.018	
E956292	0.016	
E956293	0.012	
E956294	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E956295	0.037	
E956296	< 0.005	
E956297	0.006	
E956298	0.007	
E956299	0.005	
E956300	< 0.005	
E956301	0.006	
E956302	0.009	
E956303	0.017	
E956304	0.008	
E956305	0.008	
E956306	0.005	
E956307	0.006	
E956308	0.006	
E956309	0.008	
E956310	3.41	
E956311	< 0.005	
E956312	< 0.005	
E956313	0.006	
E956314	0.008	
E956315	0.012	
E956316	0.011	
E956317	0.006	
OREAS 214 Meas		2.97
OREAS 214 Cert		3.03
OREAS 214 Meas		3.18
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.87
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.95
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.519	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.502	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.509	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.511	
OREAS 218 Cert	0.531	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 218 Meas	0.509	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.538	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.515	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.07	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.12	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.19	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.15	
OREAS 224 (Fire Assay) Cert	2.13	
OREAS 224 (Fire Assay) Meas	2.15	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.15	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.05	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.20	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Meas		
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.17	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 209 (Fire Assay) Meas	1.56	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.60	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.50	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.55	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
E962284 Orig	0.014	
E962284 Dup	0.022	
E962291 Orig	0.007	
E962291 Dup	0.007	
E962302 Orig	0.068	
E962302 Dup	0.076	
E962314 Orig	0.006	
E962314 Dup	0.006	
E962318 Orig	0.009	
E962318 Split	0.010	
E962322 Orig	0.019	
E962322 Dup	0.021	
E962332 Orig	1.46	
E962332 Dup	1.49	
E962344 Orig	0.024	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962344 Dup	0.024	
E962357 Orig	0.093	
E962357 Dup	0.075	
E962363 Orig	0.183	
E962363 Dup	0.146	
E962368 Orig	0.007	
E962368 Split	0.007	
E962372 Orig	2.56	
E962372 Dup	2.92	
E962392 Orig	0.005	
E962392 Dup	0.005	
E962403 Orig	< 0.005	
E962403 Dup	< 0.005	
E962418 Orig	0.022	
E962418 Split	0.021	
E962425 Orig	0.019	
E962425 Dup	0.018	
E962433 Orig	< 0.005	
E962433 Dup	< 0.005	
E962441 Orig	0.483	
E962441 Dup	0.491	
E962461 Orig	< 0.005	
E962461 Dup	< 0.005	
E962468 Orig	< 0.005	
E962468 Split	< 0.005	
E962471 Orig	0.105	
E962471 Dup	0.087	
E952987 Orig		33.3
E952987 Dup		38.0
E952989 Orig	0.032	
E952989 Dup	0.047	
E952998 Orig	< 0.005	
E952998 Dup	< 0.005	
E956147 Orig	0.053	
E956147 Dup	0.057	
E956162 Orig	0.009	
E956162 Split	0.016	
E956173 Orig	0.005	
E956173 Dup	< 0.005	
E956184 Orig	0.059	
E956184 Dup	0.061	
E956203 Orig	0.039	
E956203 Dup	0.049	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 07-Nov-18  
**Invoice No.:** A18-16826  
**Invoice Date:** 11-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

103 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-16826**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E951721	0.124	
E951722	0.070	
E951723	0.036	
E951724	0.016	
E951725	0.087	
E951726	0.605	
E951727	0.025	
E951728	0.021	
E951729	0.011	
E951730	6.96	
E951731	0.031	
E951732	0.025	
E951733	0.015	
E951734	0.030	
E951735	0.141	
E951736	2.96	
E951737	0.015	
E951738	0.069	
E951739	0.094	
E951740	< 0.005	
E951741	0.088	
E951742	0.009	
E951743	< 0.005	
E951744	< 0.005	
E951745	0.012	
E951746	0.020	
E951747	0.013	
E951748	0.005	
E951749	0.026	
E951750	0.469	
E951751	0.012	
E951752	0.034	
E951753	0.032	
E951754	0.010	
E951755	0.009	
E951756	0.006	
E951757	< 0.005	
E951758	0.010	
E951759	0.008	
E951760	< 0.005	
E951761	0.071	
E951762	3.68	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E951763	0.323	
E951764	0.752	
E951765	0.046	
E951766	0.061	
E951767	0.023	
E951768	5.24	
E951769	0.165	
E951770	> 10.0	13.9
E951771	0.175	
E951772	0.075	
E951773	0.013	
E951774	0.019	
E951775	0.018	
E951776	0.030	
E951784	0.015	
E951785	0.016	
E951786	0.039	
E951787	0.129	
E951788	0.013	
E951789	0.040	
E951790	3.46	
E951791	0.125	
E951792	0.022	
E951793	0.022	
E951794	0.008	
E951795	0.006	
E951796	2.00	
E951797	0.023	
E951798	8.49	
E951799	1.84	
E951800	< 0.005	
E951801	1.43	
E951802	0.298	
E951803	1.03	
E951804	0.040	
E951805	0.008	
E951806	0.010	
E951807	0.163	
E951808	0.807	
E951809	0.012	
E951810	3.51	
E951811	0.609	
E951812	0.096	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E951813	1.13	
E951814	0.108	
E951815	0.029	
E951816	0.087	
E951817	1.55	
E951818	0.790	
E951819	0.045	
E951820	< 0.005	
E951821	0.015	
E951822	1.28	
E951823	0.077	
E951824	0.875	
E951825	1.63	
E951826	0.538	
E951827	0.042	
E951828	0.041	
E951829	0.041	
E951830	6.90	
OREAS 214 Meas		3.17
OREAS 214 Cert		3.03
OREAS 214 Meas		2.97
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.77
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.60
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.542	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.559	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.525	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.536	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.11	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.16	
OREAS 224 (Fire Assay) Cert	2.15	
E951721 Orig	0.124	
E951721 Dup	0.105	
E951752 Orig	0.034	
E951752 Dup	0.026	
E951771 Orig	0.175	
E951771 Split	0.369	
E951784 Orig	0.015	
E951784 Dup	0.015	
E951795 Orig	0.006	
E951795 Dup	0.006	
E951797 Orig	0.023	
E951797 Dup	0.021	
E951827 Orig	0.042	
E951827 Split	0.049	
E951828 Orig	0.041	
E951828 Dup	0.042	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 13-Nov-18  
**Invoice No.:** A18-17366  
**Invoice Date:** 21-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

105 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17366**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

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Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E961579	0.018	
E961580	< 0.005	
E961581	0.016	
E961582	0.038	
E961583	3.97	
E961584	4.76	
E961585	0.208	
E961586	> 10.0	13.7
E961587	0.931	
E961588	0.015	
E961589	0.018	
E961590	3.49	
E961591	0.007	
E921501	0.009	
E921502	0.006	
E921503	0.128	
E921504	0.284	
E921505	0.036	
E921506	0.022	
E921507	5.08	
E921508	> 10.0	14.4
E921509	0.024	
E921510	3.57	
E921511	0.015	
E921512	0.049	
E921513	1.84	
E921514	7.12	
E921515	0.079	
E921516	0.083	
E921517	0.018	
E921518	0.054	
E921519	< 0.005	
E921520	< 0.005	
E921521	0.529	
E921522	0.317	
E921523	0.045	
E921524	0.005	
E921525	0.008	
E921526	0.019	
E921527	0.036	
E921528	0.093	
E921529	0.213	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E921530	7.22	
E921531	0.219	
E921532	6.50	
E921533	0.293	
E921534	3.50	
E921535	0.775	
E921536	0.524	
E921537	9.87	
E921538	0.017	
E921539	0.008	
E921540	0.007	
E921541	0.126	
E921542	0.025	
E921543	0.819	
E921544	1.13	
E921545	0.163	
E921546	0.740	
E921547	0.082	
E921548	0.008	
E921549	0.014	
E921550	0.506	
E921551	0.247	
E921552	0.012	
E921553	0.015	
E921554	0.005	
E921555	0.013	
E921556	0.023	
E921557	0.076	
E921558	0.012	
E921559	0.040	
E921560	< 0.005	
E921561	0.037	
E921562	0.016	
E921563	3.50	
E921564	0.115	
E921565	0.014	
E921566	0.009	
E921567	< 0.005	
E921568	0.152	
E921569	> 10.0	11.6
E921570	> 10.0	13.8
E921571	0.027	
E921572	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E921573	0.026	
E921574	0.035	
E921575	0.288	
E921576	0.323	
E921577	0.107	
E921578	0.104	
E921579	0.160	
E921580	< 0.005	
E921581	0.054	
E921582	0.056	
E921583	< 0.005	
E921584	< 0.005	
E964001	< 0.005	
E964002	0.006	
E964003	0.013	
E964004	< 0.005	
E964005	< 0.005	
E964006	0.005	
E964007	0.220	
E964008	0.012	
OREAS 214 Meas		3.14
OREAS 214 Cert		3.03
OREAS 214 Meas		3.19
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.89
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.76
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.521	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.523	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.535	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.533	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.12	
OREAS 224 (Fire Assay) Cert	2.15	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 224 (Fire Assay) Meas	2.18	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.11	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.18	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.21	
OREAS 224 (Fire Assay) Cert	2.15	
E921503 Orig	0.128	
E921503 Dup	0.118	
E921511 Orig	0.015	
E921511 Dup	0.015	
E921521 Orig	0.529	
E921521 Dup	0.502	
E921537 Orig	9.87	
E921537 Split	9.90	
E921555 Orig	0.013	
E921555 Dup	0.013	
E921567 Orig	< 0.005	
E921567 Dup	< 0.005	
E921569 Orig		11.6
E921569 Dup		11.8
E921576 Orig	0.323	
E921576 Dup	0.234	
E964001 Orig	< 0.005	
E964001 Dup	0.005	
E964003 Orig	0.013	
E964003 Split	0.009	
E964008 Orig	0.012	
E964008 Dup	0.009	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03





**Date Submitted:** 13-Nov-18  
**Invoice No.:** A18-17371  
**Invoice Date:** 17-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

102 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17371**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized and somewhat cursive, with a large initial 'E'.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962631	0.006	
E962632	0.007	
E962633	0.012	
E962634	0.149	
E962635	0.007	
E962636	0.006	
E962637	0.007	
E962638	0.006	
E962639	0.007	
E962640	< 0.005	
E962641	0.005	
E962642	0.005	
E962643	0.005	
E962644	0.005	
E962645	< 0.005	
E962646	< 0.005	
E962647	< 0.005	
E962648	< 0.005	
E962649	< 0.005	
E962650	0.471	
E962701	0.005	
E962702	0.017	
E962703	0.005	
E962704	0.019	
E962705	0.033	
E962706	0.021	
E962707	0.024	
E962708	0.025	
E962709	1.08	
E962710	3.44	
E962711	0.026	
E962712	0.045	
E962713	0.063	
E962714	0.049	
E962715	0.009	
E962716	0.018	
E962717	0.012	
E962718	0.012	
E962719	0.013	
E962720	0.011	
E962721	0.012	
E962722	0.012	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962723	0.011	
E962724	0.012	
E962725	0.010	
E962726	0.011	
E962727	0.010	
E962728	0.011	
E962729	0.010	
E962730	7.15	
E962731	0.011	
E962732	0.011	
E962733	0.013	
E962734	0.049	
E962735	0.011	
E962736	0.012	
E962737	0.060	
E962738	0.009	
E962739	0.022	
E962740	< 0.005	
E962741	0.016	
E962742	< 0.005	
E962743	< 0.005	
E962744	0.065	
E962745	0.006	
E962746	0.015	
E962747	0.015	
E962748	0.018	
E962749	0.053	
E962750	0.510	
E962751	0.097	
E962752	0.045	
E962753	0.023	
E962754	0.006	
E962755	0.006	
E962756	0.006	
E961592	< 0.005	
E961593	< 0.005	
E961594	< 0.005	
E961595	0.031	
E961596	0.012	
E961597	5.34	
E961598	4.64	
E961599	> 10.0	19.4
E961600	0.019	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E961601	0.822	
E961602	0.358	
E961603	0.116	
E961604	0.014	
E961605	0.011	
E961606	0.021	
E961607	< 0.005	
E961608	< 0.005	
E961609	0.180	
E961610	3.30	
E961611	0.953	
E961612	0.262	
E961613	1.57	
E961614	0.006	
E961615	< 0.005	
E961616	0.006	
E961617	< 0.005	
OREAS 214 Meas		3.08
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.90
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.502	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.531	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.07	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.15	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.11	
OREAS 224 (Fire Assay) Cert	2.15	
E962641 Orig	0.005	
E962641 Dup	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962649 Orig	< 0.005	
E962649 Dup	< 0.005	
E962731 Orig	0.011	
E962731 Split	0.012	
E962731 Orig	0.011	
E962731 Dup	0.011	
E962736 Orig	0.012	
E962736 Dup	0.012	
E962747 Orig	0.015	
E962747 Dup	0.011	
E962749 Orig	0.053	
E962749 Dup	0.064	
E961600 Orig	0.019	
E961600 Dup	0.007	
E961607 Orig	< 0.005	
E961607 Dup	< 0.005	
E961615 Orig	< 0.005	
E961615 Split	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	
Method Blank	< 0.005	



**Date Submitted:** 13-Nov-18  
**Invoice No.:** A18-17372  
**Invoice Date:** 15-Jan-19  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17372**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E870991	0.042	
E870992	0.040	
E870993	0.041	
E870994	0.757	
E870995	0.545	
E870996	0.021	
E870997	0.012	
E870999	0.022	
E871000	< 0.005	
E960191	0.073	
E960192	0.069	
E960193	0.080	
E960194	0.012	
E960195	0.019	
E960196	0.016	
E960197	0.007	
E960198	0.008	
E960199	0.044	
E960200	< 0.005	
E960201	0.029	
E960202	0.159	
E960203	0.116	
E960204	0.281	
E960205	0.009	
E960206	0.006	
E960207	0.009	
E960208	0.018	
E960209	0.028	
E960210	3.50	
E960211	0.018	
E960212	0.010	
E960213	0.075	
E960214	0.026	
E960215	0.419	
E960216	0.293	
E960217	0.113	
E960218	0.051	
E960219	0.211	
E960220	< 0.005	
E960221	0.156	
E960222	0.195	
E960223	0.135	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E960224	0.084	
E960225	0.235	
E960226	0.098	
E960227	0.249	
E960228	0.236	
E960229	0.117	
E960230	6.32	
E960231	0.409	
E960232	0.066	
E960233	0.044	
E960234	0.414	
E960235	1.35	
E960236	0.114	
E960237	0.090	
E960238	0.380	
E960239	0.098	
E960240	< 0.005	
E960241	0.025	
E960242	0.378	
E960243	0.292	
E960244	0.227	
E960245	0.209	
E960246	0.149	
E960247	0.290	
E960248	0.257	
E960249	0.466	
E960250	0.436	
E960251	0.217	
E960252	0.042	
E960253	0.005	
E962545	< 0.005	
E962546	< 0.005	
E962547	< 0.005	
E962548	< 0.005	
E962549	0.005	
E962550	0.420	
E962551	< 0.005	
E962552	0.007	
E962553	< 0.005	
E962554	< 0.005	
E962555	< 0.005	
E962556	0.112	
E962557	< 0.005	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E962558	< 0.005	
E962559	< 0.005	
E962560	< 0.005	
E962561	0.007	
E962562	< 0.005	
E962563	< 0.005	
E962564	< 0.005	
E962565	< 0.005	
E962566	< 0.005	
E962567	< 0.005	
E962568	< 0.005	
E962569	< 0.005	
E962570	> 10.0	12.9
E962571	0.011	
E962572	< 0.005	
E962573	< 0.005	
E962574	< 0.005	
E962575	< 0.005	
E962576	< 0.005	
OREAS 214 Meas		2.96
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.40
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.503	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.514	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.514	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.525	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.02	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.14	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.07	
OREAS 224 (Fire Assay) Cert	2.15	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 224 (Fire Assay) Meas	2.14	
OREAS 224 (Fire Assay) Cert	2.15	
E870991 Orig	0.042	
E870991 Dup	0.048	
E960203 Orig	0.116	
E960203 Dup	0.151	
E960213 Orig	0.075	
E960213 Dup	0.073	
E960231 Orig	0.409	
E960231 Split	0.346	
E960231 Split	0.346	
E960238 Orig	0.380	
E960238 Dup	0.407	
E960249 Orig	0.466	
E960249 Dup	0.457	
E962552 Orig	0.007	
E962552 Dup	0.009	
E962561 Orig	0.007	
E962561 Dup	0.008	
E962569 Orig	< 0.005	
E962569 Dup	< 0.005	
E962572 Orig	< 0.005	
E962572 Split	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 13-Nov-18  
**Invoice No.:** A18-17375  
**Invoice Date:** 28-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17375**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Eliitsa Hrischeva". The signature is written in a cursive style with some loops and flourishes.

---

Eliitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E961033	3.25	
E961034	0.014	
E961035	0.006	
E961036	0.043	
E961037	1.11	
E961038	> 10.0	11.2
E961039	0.787	
E961040	< 0.005	
E961041	0.016	
E961042	0.397	
E961043	0.758	
E961044	1.65	
E961045	1.44	
E961046	9.91	
E961047	1.04	
E961048	1.43	
E961049	1.06	
E961050	0.457	
E961051	6.36	
E961052	0.066	
E961053	1.68	
E961054	0.287	
E961055	0.146	
E961056	0.852	
E961057	0.046	
E961058	0.039	
E961059	0.025	
E961060	< 0.005	
E961061	0.162	
E961062	0.012	
E961063	0.005	
E961064	0.005	
E961065	0.015	
E961066	0.046	
E961067	0.160	
E961068	0.792	
E961069	0.138	
E961070	> 10.0	13.3
E961071	0.099	
E961072	0.390	
E961073	0.880	
E961074	6.24	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E961075	0.718	
E961076	1.76	
E961077	2.21	
E961078	1.33	
E961079	0.039	
E961080	< 0.005	
E961081	0.017	
E961082	0.150	
E961083	2.53	
E961084	0.068	
E961085	0.181	
E961086	0.278	
E961087	1.27	
E961088	0.052	
E961089	0.155	
E961090	3.46	
E961091	0.357	
E961092	7.04	
E961093	0.940	
E961094	0.027	
E961095	0.013	
E961096	0.009	
E961097	0.039	
E961098	< 0.005	
E961099	0.028	
E961100	< 0.005	
E961101	0.030	
E961102	2.06	
E961103	> 10.0	33.1
E961104	> 10.0	10.3
E961105	> 10.0	103
E961106	0.152	
E961107	1.02	
E961108	0.059	
E961109	0.082	
E961110	3.40	
E961111	0.029	
E961112	0.067	
E961113	0.016	
E961114	0.013	
E961115	0.092	
E961116	0.383	
E961117	0.041	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E961118	0.178	
E961119	1.49	
E961120	< 0.005	
E961121	5.16	
E961122	0.300	
E961123	0.051	
E961124	0.013	
E961125	0.098	
E961126	0.026	
E961127	0.012	
E961128	0.013	
E961129	0.005	
E961130	5.20	
E961131	0.006	
E961132	0.007	
E961133	< 0.005	
E961134	0.007	
E961135	0.007	
E961136	0.010	
OREAS 214 Meas		3.12
OREAS 214 Cert		3.03
OREAS 214 Meas		3.14
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.72
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.89
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.513	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.487	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.519	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.502	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.498	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.03	
OREAS 224 (Fire Assay) Cert	2.15	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.18	
OREAS 224 (Fire Assay) Cert	2.15	
E961053 Orig	1.68	
E961053 Dup	1.68	
E961055 Orig	0.146	
E961055 Dup	0.177	
E961066 Orig	0.046	
E961066 Dup	0.046	
E961079 Orig	0.039	
E961079 Dup	0.032	
E961082 Orig	0.150	
E961082 Split	0.187	
E961086 Orig	0.278	
E961086 Dup	0.227	
E961100 Orig	< 0.005	
E961100 Dup	< 0.005	
E961117 Orig	0.041	
E961117 Dup	0.032	
E961124 Orig	0.013	
E961124 Dup	0.014	
E961132 Orig	0.007	
E961132 Split	0.008	
E961134 Orig	0.007	
E961134 Dup	0.006	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 16-Nov-18  
**Invoice No.:** A18-17862  
**Invoice Date:** 21-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17862**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964217	0.067	
E964218	0.010	
E964219	0.287	
E964220	0.005	
E964221	0.022	
E964222	0.008	
E964223	0.007	
E964224	0.008	
E964225	0.013	
E964226	0.007	
E964227	0.006	
E964228	0.005	
E964229	0.007	
E964230	7.18	
E964231	0.008	
E964232	0.006	
E964233	0.006	
E964234	0.006	
E964235	0.006	
E964236	0.008	
E964237	0.008	
E964238	0.006	
E964239	0.008	
E964240	< 0.005	
E964241	0.011	
E964242	0.008	
E964243	0.011	
E964244	0.010	
E964245	0.005	
E964246	0.007	
E964247	0.010	
E964248	0.010	
E964249	0.012	
E964250	0.481	
E964251	0.013	
E964252	0.006	
E964253	0.011	
E964254	0.006	
E964255	0.006	
E964256	0.007	
E964257	0.006	
E964258	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964259	0.009	
E964260	< 0.005	
E964261	0.006	
E964262	0.006	
E964263	0.065	
E964264	0.016	
E964265	0.008	
E964266	0.033	
E964267	0.039	
E964268	0.013	
E964269	0.007	
E964270	> 10.0	13.6
E964271	0.010	
E964272	0.017	
E964273	0.012	
E964274	0.006	
E964275	0.038	
E964276	0.042	
E964277	0.006	
E964278	0.009	
E964279	< 0.005	
E964280	< 0.005	
E964281	< 0.005	
E964282	0.005	
E964283	0.005	
E964284	0.005	
E964285	0.007	
E964286	< 0.005	
E964287	0.006	
E964288	0.005	
E964289	0.006	
E964290	3.67	
E964291	0.010	
E964292	0.007	
E964293	0.009	
E964294	0.009	
E964295	0.007	
E964296	0.007	
E964297	0.005	
E964298	0.007	
E964299	0.012	
E964300	< 0.005	
E964301	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964302	0.006	
E964303	0.033	
E964304	0.028	
E964305	0.005	
E964306	< 0.005	
E964307	0.006	
E964308	0.009	
E964309	0.010	
E964310	3.67	
E964311	0.025	
E964312	0.009	
E964313	0.007	
E964314	0.006	
E964315	0.006	
E964316	0.006	
E964317	0.007	
E964318	0.005	
E964319	0.006	
E964320	< 0.005	
OREAS 214 Meas		3.12
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.88
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.528	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.526	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.511	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.524	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.525	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.25	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.08	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Meas		
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
E964223 Orig	0.007	
E964223 Dup	0.008	
E964236 Orig	0.008	
E964236 Dup	0.007	
E964244 Orig	0.010	
E964244 Dup	0.008	
E964252 Orig	0.006	
E964252 Dup	0.006	
E964266 Orig	0.033	
E964266 Split	0.030	
E964272 Orig	0.017	
E964272 Dup	0.013	
E964282 Orig	0.005	
E964282 Dup	0.005	
E964302 Orig	0.006	
E964302 Dup	0.007	
E964308 Orig	0.009	
E964308 Dup	0.007	
E964316 Orig	0.006	
E964316 Split	0.007	
E964318 Orig	0.005	
E964318 Dup	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	



**Date Submitted:** 16-Nov-18  
**Invoice No.:** A18-17864  
**Invoice Date:** 24-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17864**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Eliitsa Hrischeva". The signature is fluid and cursive, written over a horizontal line.

Eliitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964009	0.010	
E964010	3.43	
E964011	0.010	
E964012	0.008	
E964013	0.006	
E964014	0.013	
E964015	0.007	
E964016	0.009	
E964017	0.005	
E964018	0.211	
E964019	0.008	
E964020	< 0.005	
E964021	0.015	
E964022	0.011	
E964023	0.014	
E964024	0.017	
E964025	1.04	
E964026	0.022	
E964027	0.019	
E964028	0.017	
E964029	0.051	
E964030	7.00	
E964031	> 10.0	15.7
E964032	8.71	
E964033	0.062	
E964034	0.021	
E964035	0.009	
E964036	0.007	
E964037	0.010	
E964038	0.005	
E964039	0.006	
E964040	< 0.005	
E964041	0.005	
E964042	0.005	
E964043	< 0.005	
E964044	0.010	
E964045	0.008	
E964046	0.007	
E964047	0.031	
E964048	2.75	
E964049	6.50	
E964050	0.447	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964051	1.68	
E964052	4.18	
E964053	1.20	
E964054	1.00	
E964055	0.387	
E964056	0.088	
E964057	0.008	
E964058	0.014	
E964059	0.052	
E964060	< 0.005	
E964061	0.009	
E964062	0.015	
E964063	0.011	
E964064	0.021	
E964065	0.020	
E964066	0.009	
E964067	0.005	
E964068	0.009	
E964069	0.007	
E964070	> 10.0	13.1
E964071	0.008	
E964072	0.007	
E964073	0.006	
E964074	< 0.005	
E964075	0.007	
E964076	0.007	
E964077	0.016	
E964078	0.016	
E964079	0.028	
E964080	< 0.005	
E964081	0.011	
E964082	0.026	
E964083	0.005	
E964084	0.029	
E964085	0.010	
E964086	0.016	
E964087	0.007	
E964088	< 0.005	
E964089	0.012	
E964090	3.45	
E964091	0.005	
E964092	< 0.005	
E964093	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964094	< 0.005	
E964095	< 0.005	
E964096	< 0.005	
E964097	< 0.005	
E964098	< 0.005	
E964099	< 0.005	
E964100	< 0.005	
E964101	< 0.005	
E964102	< 0.005	
E964103	< 0.005	
E964104	< 0.005	
E964105	0.020	
E964106	0.020	
E964107	< 0.005	
E964108	< 0.005	
E964109	< 0.005	
E964110	3.45	
E964111	0.006	
E964112	< 0.005	
OREAS 214 Meas		2.97
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.64
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.498	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.513	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.522	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.11	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.16	
OREAS 224 (Fire Assay) Cert	2.15	
E964015 Orig	0.007	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964015 Dup	0.006	
E964028 Orig	0.017	
E964028 Dup	0.024	
E964036 Orig	0.007	
E964036 Dup	0.008	
E964058 Orig	0.014	
E964058 Split	0.016	
E964058 Split	0.016	
E964061 Orig	0.009	
E964061 Dup	0.007	
E964065 Orig	0.020	
E964065 Dup	0.021	
E964076 Orig	0.007	
E964076 Dup	0.007	
E964088 Orig	< 0.005	
E964088 Dup	< 0.005	
E964097 Orig	< 0.005	
E964097 Dup	< 0.005	
E964106 Orig	0.020	
E964106 Dup	0.029	
E964108 Orig	< 0.005	
E964108 Split	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 16-Nov-18  
**Invoice No.:** A18-17865  
**Invoice Date:** 21-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17865**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized and somewhat cursive, with a horizontal line underneath it.

Emmanuel Esemé , Ph.D.  
Quality Control

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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964113	< 0.005
E964114	0.013
E964115	0.006
E964116	< 0.005
E964117	0.005
E964118	0.013
E964119	0.005
E964120	< 0.005
E964121	0.005
E964122	< 0.005
E964123	0.041
E964124	0.007
E964125	< 0.005
E964126	0.006
E964127	0.005
E964128	< 0.005
E964129	0.006
E964130	6.92
E964131	0.006
E964132	0.005
E964133	0.007
E964134	0.007
E964135	0.013
E964136	0.005
E964137	0.006
E964138	0.007
E964139	0.006
E964140	< 0.005
E964141	0.011
E964142	0.065
E964143	0.006
E964144	0.013
E964145	0.011
E964146	0.008
E964147	0.009
E964148	0.008
E964149	0.014
E964150	0.458
E964151	0.012
E964152	0.011
E964153	0.016
E964154	0.021
E964155	0.011

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964156	0.036
E964157	0.149
E964158	0.034
E964159	0.008
E964160	0.006
E964161	0.106
E964162	0.047
E964163	0.008
E964164	0.020
E964165	0.017
E964166	< 0.005
E964167	< 0.005
E964168	0.010
E964169	0.021
E964170	7.38
E964171	0.048
E964172	0.035
E964173	0.042
E964174	0.123
E964175	0.011
E964176	0.007
E964177	0.009
E964178	0.008
E964179	0.025
E964180	< 0.005
E964181	0.015
E964182	0.021
E964183	0.033
E964184	0.094
E964185	0.042
E964186	0.013
E964187	0.010
E964188	0.008
E964189	0.007
E964190	3.36
E964191	0.017
E964192	0.010
E964193	0.017
E964194	0.010
E964195	0.007
E964196	0.005
E964197	0.011
E964198	0.008

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964199	0.007
E964200	0.006
E964201	0.018
E964202	0.007
E964203	0.012
E964204	0.034
E964205	0.123
E964206	0.142
E964207	0.011
E964208	0.017
E964209	0.018
E964210	3.42
E964211	0.008
E964212	0.043
E964213	0.142
E964214	0.011
E964215	0.217
E964216	0.043
OREAS 218 Meas	0.500
OREAS 218 Cert	0.531
OREAS 218 Meas	0.519
OREAS 218 Cert	0.531
OREAS 218 Meas	0.525
OREAS 218 Cert	0.531
OREAS 218 Meas	0.517
OREAS 218 Cert	0.531
OREAS 224 (Fire Assay) Meas	2.12
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.06
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.07
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.07
OREAS 224 (Fire Assay) Cert	2.15
E964113 Orig	< 0.005
E964113 Dup	< 0.005
E964134 Orig	0.007

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964134 Dup	0.006
E964144 Orig	0.013
E964144 Dup	0.014
E964162 Orig	0.047
E964162 Split	0.047
E964162 Split	0.047
E964169 Orig	0.021
E964169 Dup	0.016
E964180 Orig	< 0.005
E964180 Dup	< 0.005
E964188 Orig	0.008
E964188 Dup	0.007
E964201 Orig	0.018
E964201 Dup	0.021
E964207 Orig	0.011
E964207 Dup	0.012
E964212 Orig	0.043
E964212 Split	0.041
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	0.005
Method Blank	< 0.005



**Date Submitted:** 16-Nov-18  
**Invoice No.:** A18-17866  
**Invoice Date:** 24-Dec-18  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17866**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964429	0.005
E964430	7.10
E964431	0.006
E964432	0.005
E964433	< 0.005
E964434	< 0.005
E964435	0.006
E964436	0.005
E964437	0.007
E964438	< 0.005
E964439	< 0.005
E964440	< 0.005
E964441	< 0.005
E964442	< 0.005
E964443	< 0.005
E964444	< 0.005
E964445	< 0.005
E964446	< 0.005
E964447	< 0.005
E964448	< 0.005
E964449	0.030
E964450	0.454
E964451	< 0.005
E964452	< 0.005
E964453	< 0.005
E964454	< 0.005
E964455	0.005
E964456	< 0.005
E964457	< 0.005
E964458	< 0.005
E964459	< 0.005
E964460	< 0.005
E964461	0.005
E964462	0.019
E964463	< 0.005
E964464	< 0.005
E964465	< 0.005
E964466	< 0.005
E964467	< 0.005
E964468	0.051
E922501	0.008
E922502	< 0.005
E922503	< 0.005



	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E922504	0.007
E922505	0.005
E922506	0.010
E922507	0.006
E922508	< 0.005
E922509	< 0.005
E922510	3.62
E922511	0.016
E922512	0.011
E922513	0.009
E922514	0.010
E922515	0.051
E922516	0.006
E922517	0.014
E922518	0.010
E922519	0.006
E922520	< 0.005
E922521	0.006
E922522	0.008
E922523	0.009
E922524	0.007
E922525	0.007
E922526	0.012
E922527	0.021
E922528	0.008
E922529	0.016
E922530	6.83
E922531	0.027
E922532	0.026
E922533	0.016
E922534	0.372
E922535	0.011
E922536	0.016
E922537	0.008
E922538	0.010
E922539	0.012
E922540	0.006
E922541	0.015
E922542	0.017
E922543	0.009
E922544	0.007
E922545	0.008
E922546	0.007

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E922547	0.008
E922548	0.008
E922549	0.010
E922550	0.490
E922551	0.008
E922552	0.011
E922553	0.008
E922554	0.012
E922555	0.131
E922556	0.055
E922557	0.015
E922558	< 0.005
E922559	0.005
E922560	< 0.005
E922561	0.006
E922562	0.043
E922563	0.042
E922564	0.015
OREAS 218 Meas	0.505
OREAS 218 Cert	0.531
OREAS 218 Meas	0.501
OREAS 218 Cert	0.531
OREAS 218 Meas	0.502
OREAS 218 Cert	0.531
OREAS 218 Meas	0.503
OREAS 218 Cert	0.531
OREAS 224 (Fire Assay) Meas	2.12
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.16
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.12
OREAS 224 (Fire Assay) Cert	2.15
OREAS 224 (Fire Assay) Meas	2.12
OREAS 224 (Fire Assay) Cert	2.15
E964444 Orig	< 0.005
E964444 Dup	< 0.005
E964451 Orig	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E964451 Dup	< 0.005
E964462 Orig	0.019
E964462 Dup	0.026
E922502 Orig	< 0.005
E922502 Dup	0.005
E922511 Orig	0.016
E922511 Split	0.021
E922514 Orig	0.010
E922514 Dup	0.009
E922520 Orig	< 0.005
E922520 Dup	< 0.005
E922540 Orig	0.006
E922540 Dup	< 0.005
E922549 Orig	0.010
E922549 Dup	0.009
E922558 Orig	< 0.005
E922558 Dup	0.005
E922561 Orig	0.006
E922561 Split	0.008
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005



**Date Submitted:** 16-Nov-18  
**Invoice No.:** A18-17868  
**Invoice Date:** 08-Jan-19  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

108 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A18-17868**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Elitsa Hrischeva".

---

Elitsa Hrischeva, Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964321	2.61	
E964322	0.037	
E964323	0.006	
E964324	0.009	
E964325	0.021	
E964326	0.009	
E964327	0.005	
E964328	0.009	
E964329	0.013	
E964330	7.07	
E964331	0.011	
E964332	0.012	
E964333	0.009	
E964334	0.006	
E964335	0.006	
E964336	0.019	
E964337	0.012	
E964338	0.080	
E964339	0.010	
E964340	< 0.005	
E964341	0.011	
E964342	0.013	
E964343	0.006	
E964344	0.006	
E964345	0.007	
E964346	0.006	
E964347	< 0.005	
E964348	0.008	
E964349	0.015	
E964350	0.468	
E964351	0.009	
E964352	0.014	
E964353	0.011	
E964354	0.010	
E964355	0.005	
E964356	0.006	
E964357	0.005	
E964358	< 0.005	
E964359	0.008	
E964360	< 0.005	
E964361	0.007	
E964362	0.018	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964363	0.005	
E964364	0.009	
E964365	0.030	
E964366	0.044	
E964367	0.035	
E964368	0.036	
E964369	0.025	
E964370	> 10.0	13.2
E964371	0.016	
E964372	0.008	
E964373	0.012	
E964374	0.006	
E964375	0.014	
E964376	0.006	
E964377	0.009	
E964378	0.007	
E964379	0.009	
E964380	0.006	
E964381	0.007	
E964382	0.006	
E964383	0.006	
E964384	0.005	
E964385	0.007	
E964386	0.006	
E964387	0.007	
E964388	0.009	
E964389	0.010	
E964390	3.46	
E964391	0.012	
E964392	0.010	
E964393	0.022	
E964394	0.045	
E964395	0.009	
E964396	0.012	
E964397	0.006	
E964398	0.006	
E964399	0.046	
E964400	0.005	
E964401	0.010	
E964402	0.009	
E964403	0.008	
E964404	0.010	
E964405	0.011	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964406	0.013	
E964407	0.010	
E964408	0.007	
E964409	0.007	
E964410	3.57	
E964411	0.009	
E964412	0.008	
E964413	0.008	
E964414	0.011	
E964415	0.007	
E964416	0.008	
E964417	0.009	
E964418	0.009	
E964419	0.007	
E964420	0.005	
E964421	0.012	
E964422	0.009	
E964423	0.013	
E964424	0.009	
E964425	0.008	
E964426	0.010	
E964427	0.006	
E964428	0.014	
OREAS 216 (Fire Assay) Meas		6.81
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.529	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.531	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.514	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.530	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.14	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.08	
OREAS 224 (Fire Assay) Cert	2.15	
E964327 Orig	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964327 Dup	0.006	
E964340 Orig	< 0.005	
E964340 Dup	0.005	
E964346 Orig	0.006	
E964346 Dup	0.006	
E964362 Orig	0.018	
E964362 Dup	0.020	
E964371 Orig	0.016	
E964371 Split	0.016	
E964374 Orig	0.006	
E964374 Dup	0.006	
E964382 Orig	0.006	
E964382 Dup	0.010	
E964391 Orig	0.012	
E964391 Dup	0.011	
E964397 Orig	0.006	
E964397 Dup	0.007	
E964411 Orig	0.009	
E964411 Dup	0.008	
E964421 Orig	0.010	
E964421 Split	0.007	
E964421 Orig	0.012	
E964421 Dup	0.008	
E964424 Orig	0.009	
E964424 Dup	0.010	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank		< 0.03





**Date Submitted:** 10-Jan-19  
**Invoice No.:** A19-00595  
**Invoice Date:** 29-Jan-19  
**Your Reference:** MW4737

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

108 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Geraldton Au - Fire Assay AA

REPORT **A19-00595**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
801 Main Street, P.O. Box 999, Geraldton, Ontario, Canada, P0T 1M0  
TELEPHONE +807 854-2020 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Geraldton@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958001	0.010	
E958002	0.879	
E958003	0.053	
E958004	1.18	
E958005	0.030	
E958006	0.062	
E958007	> 10.0	14.2
E958008	2.63	
E958009	0.014	
E958010	3.70	
E958011	0.013	
E958012	0.024	
E958013	0.011	
E958014	0.007	
E958015	0.008	
E958016	0.026	
E958017	0.008	
E958018	0.020	
E958019	0.067	
E958020	0.014	
E958021	3.68	
E958022	0.373	
E958023	0.708	
E958024	1.80	
E958025	2.52	
E958026	1.92	
E958027	0.569	
E958028	0.219	
E958029	0.814	
E958030	6.88	
E958031	0.657	
E958032	0.013	
E958033	0.010	
E958034	0.019	
E958035	0.020	
E958036	0.018	
E958037	0.162	
E958038	0.010	
E958039	0.012	
E958040	0.007	
E958041	0.020	
E958042	0.289	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958043	0.041	
E958044	0.010	
E958045	0.016	
E958046	0.014	
E958047	0.050	
E958048	0.038	
E958049	0.033	
E958050	0.489	
E958051	0.010	
E958052	0.012	
E958053	0.010	
E958054	0.445	
E958055	0.010	
E958056	0.015	
E958057	0.073	
E958058	0.031	
E958059	0.011	
E958060	0.005	
E958061	0.009	
E958062	0.091	
E958063	0.025	
E958064	0.230	
E958065	0.011	
E958066	0.009	
E958067	0.035	
E958068	0.008	
E958069	0.007	
E958070	> 10.0	13.7
E958071	0.011	
E958072	0.024	
E958073	0.009	
E958074	0.009	
E958075	0.007	
E958076	0.007	
E964469	0.029	
E964470	> 10.0	13.6
E964471	0.013	
E964472	0.011	
E964473	0.009	
E964474	0.038	
E964475	0.020	
E964476	0.023	
E964477	0.018	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E964478	0.022	
E964479	0.329	
E964480	0.005	
E964481	0.013	
E964482	0.013	
E964483	0.005	
E964484	0.011	
E964485	0.158	
E964486	0.141	
E964487	0.015	
E964488	0.007	
E964489	0.006	
E964490	3.49	
E964491	0.011	
E964492	0.014	
E964493	0.024	
E964494	0.041	
E964495	0.125	
E964496	0.264	
E964497	0.122	
E964498	0.388	
E964499	0.136	
E964500	0.005	
OREAS 216 (Fire Assay) Meas		6.64
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.542	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.524	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.531	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.532	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.535	
OREAS 218 Cert	0.531	
OREAS 220 (Fire Assay) Meas	0.863	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.855	
OREAS 220 (Fire Assay) Cert	0.866	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Cert		
OREAS 220 (Fire Assay) Meas	0.869	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.882	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.866	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 224 (Fire Assay) Meas		2.19
OREAS 224 (Fire Assay) Cert		2.15
E958011 Orig	0.013	
E958011 Dup	0.009	
E958020 Orig	0.014	
E958020 Dup	0.012	
E958045 Orig	0.016	
E958045 Dup	0.011	
E958051 Orig	0.010	
E958051 Split	0.009	
E964471 Orig	0.013	
E964471 Dup	0.009	
E964481 Orig	0.013	
E964481 Dup	0.013	
E964491 Orig	0.011	
E964491 Dup	0.008	
E964492 Orig	0.014	
E964492 Split	0.013	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 10-Jan-19  
**Invoice No.:** A19-00597  
**Invoice Date:** 04-Feb-19  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

108 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Geraldton Au - Fire Assay AA

REPORT **A19-00597**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
801 Main Street, P.O. Box 999, Geraldton, Ontario, Canada, P0T 1M0  
TELEPHONE +807 854-2020 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Geraldton@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958077	0.007	
E958078	0.021	
E958079	0.006	
E958080	< 0.005	
E958081	0.017	
E958082	0.009	
E958083	0.007	
E958084	0.013	
E958085	0.018	
E958086	0.008	
E958087	0.013	
E958088	0.022	
E958089	0.014	
E958090	3.56	
E958091	0.008	
E958092	0.005	
E958093	< 0.005	
E958094	0.006	
E958095	0.008	
E958096	0.008	
E958097	0.041	
E958098	0.017	
E958099	0.020	
E958100	< 0.005	
E958101	0.029	
E958102	0.040	
E958103	0.028	
E958104	0.080	
E958105	> 10.0	13.0
E958106	> 10.0	17.3
E958107	0.135	
E958108	8.58	
E958109	0.088	
E958110	3.50	
E958111	0.641	
E958112	1.57	
E958113	0.725	
E958114	1.15	
E958115	0.359	
E958116	> 10.0	6.22
E958117	> 10.0	12.6
E958118	> 10.0	9.12

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958119	6.60	
E958120	0.010	
E958121	0.165	
E958122	2.31	
E958123	0.432	
E958124	2.44	
E958125	0.011	
E958126	0.012	
E958127	0.013	
E958128	0.012	
E958129	0.008	
E958130	7.10	
E958131	0.009	
E958132	0.009	
E958133	0.009	
E958134	0.020	
E958135	0.052	
E958136	0.009	
E958137	0.026	
E958138	0.068	
E958139	0.016	
E958140	0.006	
E958141	0.015	
E958142	0.032	
E958143	0.052	
E958144	0.011	
E958145	0.020	
E958146	0.017	
E958147	0.032	
E958148	0.045	
E958149	0.040	
E958150	0.483	
E958151	1.33	
E958152	0.028	
E958153	0.067	
E958154	> 10.0	18.1
E958155	> 10.0	28.0
E958156	0.188	
E958157	0.018	
E958158	0.010	
E958159	0.009	
E958160	0.006	
E958161	0.009	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958162	0.009	
E958163	0.013	
E958164	0.014	
E958165	0.013	
E958166	0.010	
E958167	0.010	
E958168	0.009	
E958169	0.009	
E958170	> 10.0	13.4
E958171	0.015	
E958172	0.012	
E958173	0.012	
E958174	0.013	
E958175	0.192	
E958176	2.23	
E958177	0.884	
E958178	0.591	
E958179	3.94	
E958180	0.009	
E958181	1.28	
E958182	1.98	
E958183	0.205	
E958184	0.007	
OREAS 216 (Fire Assay) Meas		6.79
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.67
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.64
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.529	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.542	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.531	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.543	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.541	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.532	
OREAS 218 Cert	0.531	
OREAS 220 (Fire Assay) Meas	0.857	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.863	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.847	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.853	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.850	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 220 (Fire Assay) Meas	0.876	
OREAS 220 (Fire Assay) Cert	0.866	
OREAS 224 (Fire Assay) Meas		2.18
OREAS 224 (Fire Assay) Cert		2.15
OREAS 224 (Fire Assay) Meas		2.22
OREAS 224 (Fire Assay) Cert		2.15
OREAS 224 (Fire Assay) Meas		2.19
OREAS 224 (Fire Assay) Cert		2.15
E958086 Orig	0.008	
E958086 Dup	0.008	
E958096 Orig	0.008	
E958096 Dup	0.008	
E958106 Orig	> 10.0	
E958106 Dup	> 10.0	
E958117 Orig	> 10.0	12.6

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958117 Dup	> 10.0	12.3
E958121 Orig	0.165	
E958121 Dup	0.142	
E958126 Orig	0.012	
E958126 Split	0.012	
E958131 Orig	0.009	
E958131 Dup	0.012	
E958140 Orig	0.006	
E958140 Dup	0.007	
E958155 Orig	> 10.0	
E958155 Dup	> 10.0	
E958165 Orig	0.013	
E958165 Dup	0.012	
E958175 Orig	0.192	
E958175 Dup	0.158	
E958176 Orig	2.23	
E958176 Split	2.34	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 11-Jan-19  
**Invoice No.:** A19-00687  
**Invoice Date:** 05-Feb-19  
**Your Reference:** MW4742

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

100 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A19-00687**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with a large 'E' and 'S'.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958185	0.319	
E958186	0.022	
E958187	0.094	
E958188	0.009	
E958189	0.016	
E958190	3.45	
E958191	0.012	
E958192	0.012	
E958193	0.028	
E958194	0.031	
E958195	0.028	
E958196	0.011	
E958197	0.057	
E958198	0.092	
E958199	0.032	
E958200	< 0.005	
E958201	< 0.005	
E958202	0.012	
E958203	0.006	
E958204	0.007	
E958205	0.013	
E958206	0.102	
E958207	0.007	
E958208	< 0.005	
E958209	< 0.005	
E958210	3.64	
E958211	0.005	
E958212	< 0.005	
E958213	0.005	
E958214	< 0.005	
E958215	< 0.005	
E958216	< 0.005	
E958217	0.022	
E958218	< 0.005	
E958219	0.151	
E958220	< 0.005	
E958221	0.007	
E958222	9.25	
E958223	0.026	
E958224	0.023	
E958225	0.013	
E958226	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958227	4.58	
E958228	0.334	
E958229	6.75	
E958230	7.29	
E958231	7.19	
E958232	9.38	
E958233	5.95	
E958234	2.58	
E958235	0.027	
E958236	0.447	
E958237	0.384	
E958238	0.310	
E958239	0.461	
E958240	< 0.005	
E958241	0.099	
E958242	0.080	
E958243	0.355	
E958244	0.044	
E958245	< 0.005	
E958246	< 0.005	
E958247	0.009	
E958248	< 0.005	
E958249	< 0.005	
E958250	0.467	
E958251	0.006	
E958252	0.013	
E958253	0.055	
E958254	0.029	
E958255	1.77	
E958256	0.452	
E958257	0.710	
E958258	0.648	
E958259	0.344	
E958260	< 0.005	
E958261	2.39	
E958262	0.015	
E958263	0.012	
E958264	0.008	
E958265	0.010	
E958266	0.134	
E958267	0.010	
E958268	0.007	
E958269	0.011	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958270	> 10.0	13.2
E958271	< 0.005	
E958272	0.008	
E958273	0.006	
E958274	0.031	
E958275	0.017	
E958276	0.005	
E958277	< 0.005	
E958278	0.022	
E958279	0.011	
E958280	< 0.005	
E958281	0.054	
E958282	0.014	
E958283	0.014	
E958284	0.005	
OREAS 214 Meas		3.04
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.58
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.523	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.522	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.515	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.19	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
E958194 Orig	0.031	
E958194 Dup	0.029	
E958204 Orig	0.007	
E958204 Dup	0.010	
E958214 Orig	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958214 Dup	< 0.005	
E958220 Orig	< 0.005	
E958220 Dup	< 0.005	
E958234 Orig	2.58	
E958234 Split	2.58	
E958241 Orig	0.099	
E958241 Dup	0.139	
E958251 Orig	0.006	
E958251 Dup	0.005	
E958269 Orig	0.011	
E958269 Dup	0.006	
E958276 Orig	0.005	
E958276 Dup	0.006	
E958284 Orig	0.005	
E958284 Split	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	





**Date Submitted:** 11-Jan-19  
**Invoice No.:** A19-00689  
**Invoice Date:** 11-Feb-19  
**Your Reference:** MW4745

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

110 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A19-00689**

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958285	0.010	
E958286	0.007	
E958287	0.281	
E958288	0.176	
E958289	0.307	
E958290	3.48	
E958291	0.138	
E958292	0.032	
E958293	0.039	
E958294	0.035	
E958295	0.014	
E958296	0.005	
E958297	0.266	
E958298	0.010	
E958299	< 0.005	
E958300	0.009	
E958301	0.013	
E958302	0.010	
E958303	< 0.005	
E958304	< 0.005	
E958305	< 0.005	
E958306	0.045	
E958307	0.056	
E958308	< 0.005	
E958309	< 0.005	
E958310	3.65	
E958311	< 0.005	
E958312	< 0.005	
E958313	< 0.005	
E958314	< 0.005	
E958315	< 0.005	
E958316	< 0.005	
E958317	< 0.005	
E958318	< 0.005	
E958319	0.102	
E958320	< 0.005	
E958321	0.014	
E958322	< 0.005	
E958323	< 0.005	
E958324	< 0.005	
E958325	0.045	
E958326	0.063	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958327	0.024	
E958328	0.215	
E958329	> 10.0	28.3
E958330	6.90	
E958331	> 10.0	16.4
E958332	0.141	
E958333	0.009	
E958334	0.015	
E958335	< 0.005	
E958336	< 0.005	
E958337	< 0.005	
E958338	< 0.005	
E958339	0.005	
E958340	< 0.005	
E958341	< 0.005	
E958342	0.005	
E958343	< 0.005	
E958344	1.87	
E958345	1.65	
E958346	0.750	
E958347	1.55	
E958348	1.15	
E958349	0.149	
E958350	0.472	
E958351	0.043	
E958352	0.016	
E958353	0.011	
E958354	0.142	
E958355	0.110	
E958356	0.032	
E958357	0.018	
E958358	0.018	
E958359	0.010	
E958360	< 0.005	
E958361	0.015	
E958362	0.103	
E958363	< 0.005	
E958364	< 0.005	
E958365	< 0.005	
E958366	< 0.005	
E958367	< 0.005	
E958368	< 0.005	
E958369	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958370	> 10.0	13.5
E958371	0.047	
E958372	> 10.0	15.5
E958373	0.102	
E958374	0.646	
E958375	5.65	
E958376	0.045	
E958377	0.056	
E958378	0.035	
E958379	0.036	
E958380	< 0.005	
E958381	0.006	
E958382	0.157	
E958383	0.190	
E958384	0.145	
E958385	0.020	
E958386	0.012	
E958387	0.061	
E958388	0.061	
E958389	0.025	
E958390	3.52	
E958391	1.21	
E958392	0.125	
E958393	0.417	
E958394	3.59	
OREAS 214 Meas		2.92
OREAS 214 Cert		3.03
OREAS 214 Meas		3.11
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.47
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.75
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.66
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.506	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.508	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.517	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.521	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.05	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.07	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.13	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 209 (Fire Assay) Meas	1.51	
OREAS 209 (Fire Assay) Cert	1.58	
E958304 Orig	< 0.005	
E958304 Dup	< 0.005	
E958313 Orig	< 0.005	
E958313 Dup	< 0.005	
E958326 Orig	0.063	
E958326 Dup	0.063	
E958334 Orig	0.015	
E958334 Split	0.010	
E958338 Orig	< 0.005	
E958338 Dup	< 0.005	
E958344 Orig	1.87	
E958344 Dup	1.89	
E958354 Orig	0.142	
E958354 Dup	0.120	
E958384 Orig	0.145	
E958384 Split	0.175	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958388 Orig	0.061	
E958388 Dup	0.067	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 11-Jan-19  
**Invoice No.:** A19-00690  
**Invoice Date:** 09-Feb-19  
**Your Reference:** MW4746

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A19-00690**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958395	0.349	
E958396	0.127	
E958397	0.071	
E958398	0.101	
E958399	1.57	
E958400	< 0.005	
E958401	> 10.0	77.6
E958402	0.052	
E958403	0.042	
E958404	0.232	
E958405	< 0.005	
E958406	0.128	
E958407	0.005	
E958408	< 0.005	
E958409	0.008	
E958410	3.51	
E958411	< 0.005	
E958412	< 0.005	
E958413	< 0.005	
E958414	0.006	
E958415	< 0.005	
E958416	< 0.005	
E958417	0.052	
E958418	< 0.005	
E958419	0.117	
E958420	< 0.005	
E958421	0.007	
E958422	< 0.005	
E958423	< 0.005	
E958424	0.012	
E958425	< 0.005	
E958426	0.069	
E958427	0.029	
E958428	0.009	
E958429	< 0.005	
E958430	6.95	
E958431	< 0.005	
E958432	0.110	
E958433	0.006	
E958434	0.041	
E958435	0.033	
E958436	0.025	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958437	0.054	
E958438	0.162	
E958439	> 10.0	10.3
E958440	0.017	
E958441	6.09	
E958442	1.34	
E958443	0.634	
E958444	0.182	
E958445	0.472	
E958446	0.396	
E958447	0.505	
E958448	0.066	
E958449	< 0.005	
E958450	0.475	
E958451	< 0.005	
E958452	< 0.005	
E958453	< 0.005	
E958454	< 0.005	
E958455	< 0.005	
E958456	< 0.005	
E958457	0.006	
E958458	0.042	
E958459	0.131	
E958460	< 0.005	
E958461	0.635	
E958462	2.56	
E958463	0.142	
E958464	0.015	
E958465	0.058	
E958466	0.026	
E958467	0.013	
E958468	0.106	
E958469	0.018	
E958470	> 10.0	13.2
E958471	0.007	
E958472	0.020	
E958473	< 0.005	
E958474	0.016	
E958475	0.015	
E958476	0.046	
E958477	0.030	
E958478	0.021	
E958479	0.028	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958480	< 0.005	
E958481	0.034	
E958482	0.027	
E958483	0.153	
E958484	0.025	
E958485	0.005	
E958486	< 0.005	
E958487	< 0.005	
E958488	< 0.005	
E958489	0.010	
E958490	3.50	
E958491	0.041	
E958492	0.387	
E958493	4.71	
E958494	0.062	
E958495	0.250	
E958496	0.049	
E958497	0.239	
E958498	0.008	
OREAS 214 Meas		2.92
OREAS 214 Cert		3.03
OREAS 214 Meas		3.11
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.47
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.75
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.66
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.518	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.515	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.512	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.510	
OREAS 218 Cert	0.531	
OREAS 224 (Fire	2.09	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Assay) Meas		
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.11	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.08	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.09	
OREAS 224 (Fire Assay) Cert	2.15	
E958405 Orig	< 0.005	
E958405 Dup	< 0.005	
E958414 Orig	0.006	
E958414 Dup	0.013	
E958423 Orig	< 0.005	
E958423 Dup	< 0.005	
E958444 Orig	0.182	
E958444 Split	0.147	
E958444 Split	0.147	
E958451 Orig	< 0.005	
E958451 Dup	< 0.005	
E958462 Orig	2.56	
E958462 Dup	2.30	
E958479 Orig	0.028	
E958479 Dup	0.028	
E958486 Orig	< 0.005	
E958486 Dup	< 0.005	
E958494 Orig	0.062	
E958494 Split	0.042	
E958497 Orig	0.239	
E958497 Dup	0.205	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank		< 0.03
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 11-Jan-19  
**Invoice No.:** A19-00691  
**Invoice Date:** 08-Feb-19  
**Your Reference:** MW4747

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

104 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A19-00691**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958499	0.021	
E958500	< 0.005	
E958501	0.006	
E958502	0.070	
E958503	0.221	
E958504	0.086	
E958505	0.032	
E958506	3.84	
E958507	2.14	
E958508	0.080	
E958509	1.87	
E958510	3.33	
E958511	0.142	
E958512	0.323	
E958513	0.759	
E958514	7.02	
E958515	0.193	
E958516	0.086	
E958517	0.005	
E958518	0.005	
E958519	< 0.005	
E958520	< 0.005	
E958521	0.018	
E958522	0.081	
E958523	0.013	
E958524	0.007	
E958525	0.007	
E958526	< 0.005	
E958527	< 0.005	
E958528	< 0.005	
E958529	0.005	
E958530	7.09	
E958531	< 0.005	
E958532	< 0.005	
E958533	< 0.005	
E958534	< 0.005	
E958535	< 0.005	
E958536	< 0.005	
E958537	0.037	
E958538	< 0.005	
E958539	< 0.005	
E958540	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958541	0.011	
E958542	< 0.005	
E958543	0.056	
E958544	0.323	
E958545	< 0.005	
E958546	0.006	
E958547	0.007	
E958548	< 0.005	
E958549	< 0.005	
E958550	0.522	
E958551	< 0.005	
E958552	< 0.005	
E958553	< 0.005	
E958554	< 0.005	
E958555	0.009	
E958556	0.005	
E958557	< 0.005	
E958558	< 0.005	
E958559	< 0.005	
E958560	< 0.005	
E958561	< 0.005	
E958562	< 0.005	
E958563	< 0.005	
E958564	< 0.005	
E958565	< 0.005	
E958566	0.011	
E958567	< 0.005	
E958568	0.005	
E958569	< 0.005	
E958570	> 10.0	13.3
E958571	< 0.005	
E958572	< 0.005	
E958573	< 0.005	
E958574	< 0.005	
E958575	< 0.005	
E958576	< 0.005	
E958577	< 0.005	
E958578	< 0.005	
E958579	< 0.005	
E958580	< 0.005	
E958581	< 0.005	
E958582	< 0.005	
E958583	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958584	0.013	
E958585	< 0.005	
E958586	< 0.005	
E958587	< 0.005	
E958588	< 0.005	
E958589	< 0.005	
E958590	3.38	
E958591	0.006	
E958592	< 0.005	
E958593	< 0.005	
E958594	0.036	
E958595	0.011	
E958596	0.017	
E958597	< 0.005	
E958598	< 0.005	
E958599	< 0.005	
E958600	< 0.005	
E958601	0.008	
E958602	< 0.005	
OREAS 216 (Fire Assay) Meas		6.66
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.507	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.507	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.507	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.511	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.08	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.10	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.18	
OREAS 224 (Fire Assay) Cert	2.15	
E958499 Orig	0.021	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958499 Dup	0.020	
E958520 Orig	< 0.005	
E958520 Dup	< 0.005	
E958529 Orig	0.005	
E958529 Dup	< 0.005	
E958534 Orig	< 0.005	
E958534 Dup	< 0.005	
E958548 Orig	< 0.005	
E958548 Split	< 0.005	
E958555 Orig	0.009	
E958555 Dup	0.013	
E958565 Orig	< 0.005	
E958565 Dup	< 0.005	
E958578 Orig	< 0.005	
E958578 Dup	< 0.005	
E958587 Orig	< 0.005	
E958587 Dup	< 0.005	
E958596 Orig	0.017	
E958596 Dup	0.019	
E958598 Orig	< 0.005	
E958598 Split	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank		< 0.03



**Date Submitted:** 11-Jan-19  
**Invoice No.:** A19-00692  
**Invoice Date:** 11-Feb-19  
**Your Reference:** MW4749

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

105 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A19-00692**

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Notes:

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

CERTIFIED BY:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E958603	< 0.005	
E958604	0.009	
E958605	0.120	
E958606	0.006	
E958607	< 0.005	
E958608	< 0.005	
E958609	< 0.005	
E958610	3.35	
E958611	< 0.005	
E958612	< 0.005	
E958613	0.042	
E958614	< 0.005	
E958615	< 0.005	
E958616	< 0.005	
E958617	0.009	
E958618	0.013	
E958619	< 0.005	
E958620	< 0.005	
E958621	< 0.005	
E958622	< 0.005	
E958623	0.015	
E958624	0.011	
E958625	< 0.005	
E958626	< 0.005	
E958627	< 0.005	
E932001	0.010	
E932002	0.009	
E932003	0.144	
E932004	0.058	
E932005	0.614	
E932006	2.04	
E932007	> 10.0	11.5
E932008	1.42	
E932009	0.005	
E932010	3.50	
E932011	< 0.005	
E932012	0.019	
E932013	0.015	
E932014	0.026	
E932015	< 0.005	
E932016	< 0.005	
E932017	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E932018	< 0.005	
E932019	0.008	
E932020	< 0.005	
E932021	0.045	
E932022	0.037	
E932023	0.010	
E932024	0.006	
E932025	0.005	
E932026	0.009	
E932027	0.012	
E932028	0.007	
E932029	0.009	
E932030	7.04	
E932031	< 0.005	
E932032	< 0.005	
E932033	0.016	
E932034	0.010	
E932035	0.017	
E932036	0.021	
E932037	0.006	
E932038	0.019	
E932039	0.018	
E932040	< 0.005	
E932041	0.022	
E932042	0.015	
E932043	0.010	
E932044	< 0.005	
E932045	0.005	
E932046	< 0.005	
E932047	0.008	
E932048	< 0.005	
E932049	< 0.005	
E932050	0.445	
E932051	0.012	
E932052	< 0.005	
E932053	0.077	
E932054	3.95	
E932055	0.025	
E932056	0.082	
E932057	0.034	
E932058	0.013	
E932059	0.013	
E932060	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E932061	0.023	
E932062	0.579	
E932063	0.189	
E932064	0.011	
E932065	0.475	
E932066	0.153	
E932067	0.134	
E932068	0.615	
E932069	6.96	
E932070	> 10.0	12.9
E932071	0.516	
E932072	0.328	
E932073	0.026	
E932074	0.062	
E932075	0.131	
E932076	0.252	
E932077	2.12	
E932078	0.107	
E932079	0.010	
E932080	< 0.005	
OREAS 214 Meas		3.12
OREAS 214 Cert		3.03
OREAS 214 Meas		2.96
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.63
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.57
OREAS 216 (Fire Assay) Cert		6.66
OREAS 218 Meas	0.507	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.517	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.526	
OREAS 218 Cert	0.531	
OREAS 218 Meas	0.517	
OREAS 218 Cert	0.531	
OREAS 224 (Fire Assay) Meas	2.16	
OREAS 224 (Fire Assay) Cert	2.15	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 224 (Fire Assay) Meas	2.16	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.08	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.09	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.09	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 224 (Fire Assay) Meas	2.07	
OREAS 224 (Fire Assay) Cert	2.15	
OREAS 209 (Fire Assay) Meas	1.52	
OREAS 209 (Fire Assay) Cert	1.58	
OREAS 209 (Fire Assay) Meas	1.53	
OREAS 209 (Fire Assay) Cert	1.58	
E958618 Orig	0.013	
E958618 Dup	0.013	
E958625 Orig	< 0.005	
E958625 Dup	< 0.005	
E932009 Orig	0.005	
E932009 Dup	< 0.005	
E932025 Orig	0.005	
E932025 Split	< 0.005	
E932025 Split	< 0.005	
E932032 Orig	< 0.005	
E932032 Dup	< 0.005	
E932043 Orig	0.010	
E932043 Dup	0.011	
E932059 Orig	0.013	
E932059 Dup	0.012	
E932075 Orig	0.116	
E932075 Split	0.139	
E932075 Orig	0.131	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E932075 Dup	0.100	
E932077 Orig	2.12	
E932077 Dup	2.03	
E932079 Orig	0.010	
E932079 Dup	0.010	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	
Method Blank		< 0.03

# Appendix XIV – Invoices and Receipts

Boart Longyear Diamond Drilling  
Wisk Air Helicopters  
Activation Laboratories  
Survey Tech Instruments and Services

**(Withheld for client confidentiality).**