AR2011-108

2011 Assessment Report for License 09388

License held by Matthew Sacco

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1.0 Summary

License 09388 is located on a fingered contact between the Rhyolites of the Byers Brook Formation and the overlying basalts of the Diamond Brook Formation. This contact zone has been suspected of being the source of several gold anomalies identified in historic work. Historic work has suggested an epithermal style of Au mineralization.

The 2011 program was targeted towards sourcing these gold anomalies as well as prospecting for rare earth element mineralization as this also exists in the area. Work included rock sampling, stream sediment sampling, a spectrometer survey as well as looking for historic occurrence locations.

Prospecting turned up some interesting rock samples particularly a highly sulfide mineralized grey clay like fault gouge in a river bed as well as a similar consolidated rock along the river bank. Both materials were sampled and submitted for analysis at Dalhousie Department of Minerals Engineering for REE and quantitative trace element analyses. Unfortunately, no anomalies, other than pyrite were observed in either sample. The remainder of the 11 rock samples were analyzed in house with an Olympus Innovx DP-6000 portable XRF analyzer for REE indicators as well as Au. Small Au kicks were observed at a couple of locations but results still need to be confirmed through lab analysis. A few small niobium (REE indicator) kicks were observed in the results but are not considered highly anomalous. Future work will be focused more on gold and sulphide mineralization rather than for rare earth mineralization.

Stream sediment sampling included simple panning of the aforementioned grey clay as well as a sluice box stream sample location. Concentrated sulfides were observed in the grey clay but no visible gold was observed. Heavy mineral concentrates from the sluice box were sieved to different size fractions, Au kicks were observed in some size fractions with the XRF analyzer but subsequent gold grain counting efforts did not yield any visible gold.

The spectrometer survey failed to turn up any observable radiometric anomalies.

Generally, results offered many areas of strong sulfidation, but both Au and REE results were limited to a few small anomalies which still need to be confirmed through lab analysis.

2.0 Introduction

License 09388, located in the Cobequid Highlands area of Nova Scotia is host to a historic (Fe, Au) mineral occurrence. The current NSDNR mineral occurrence database (occurrences E11-016) only identifies Fe on site while previous mapping by Donahoe and Wallace (Donahoe, 1982) referenced historic Au presence as well as an abandoned shaft (BYE- 1-001).

Rare Earth Element (REE) mineralization has also been discovered in the Cobequid Highlands (MacHattie, 2009), as such the 2011 exploration program was targeted towards finding Au as well as REE mineralization.

Prospecting was greatly assisted by the use of two important tools, an Olympus Innovx portable DP-6000 X-ray fluorescence analyzer (XRF) and a Radiation Solutions RS-230 Spectrometer. The XRF was used to analyze rocks and soil samples for Au and REE indicators, while the spectrometer was used to look for elevated radiometrics which are known indicators of REE mineralization (Machattie, 2010). XRF results at this point remain uncorrected due to the lack of a known set of assayed reference samples to analyze and generate XRF correction factors. Due to this, results must be evaluated for anomalies rather than assuming absolute values.

3.0 Location and Access

License 09388 can be accessed by taking highway 104 west out of Truro, NS. Take exit 11 off of the 104 and proceed north on highway #4 until the junction with highway 246. Follow highway 246 for approximately 12km and exit right on to the Warwick Mountain Rd. From the Warwick Mountain Rd take the Byers Brook Rd which bi-sects the property. Several tracks provide all-terrain vehicular access to the property.

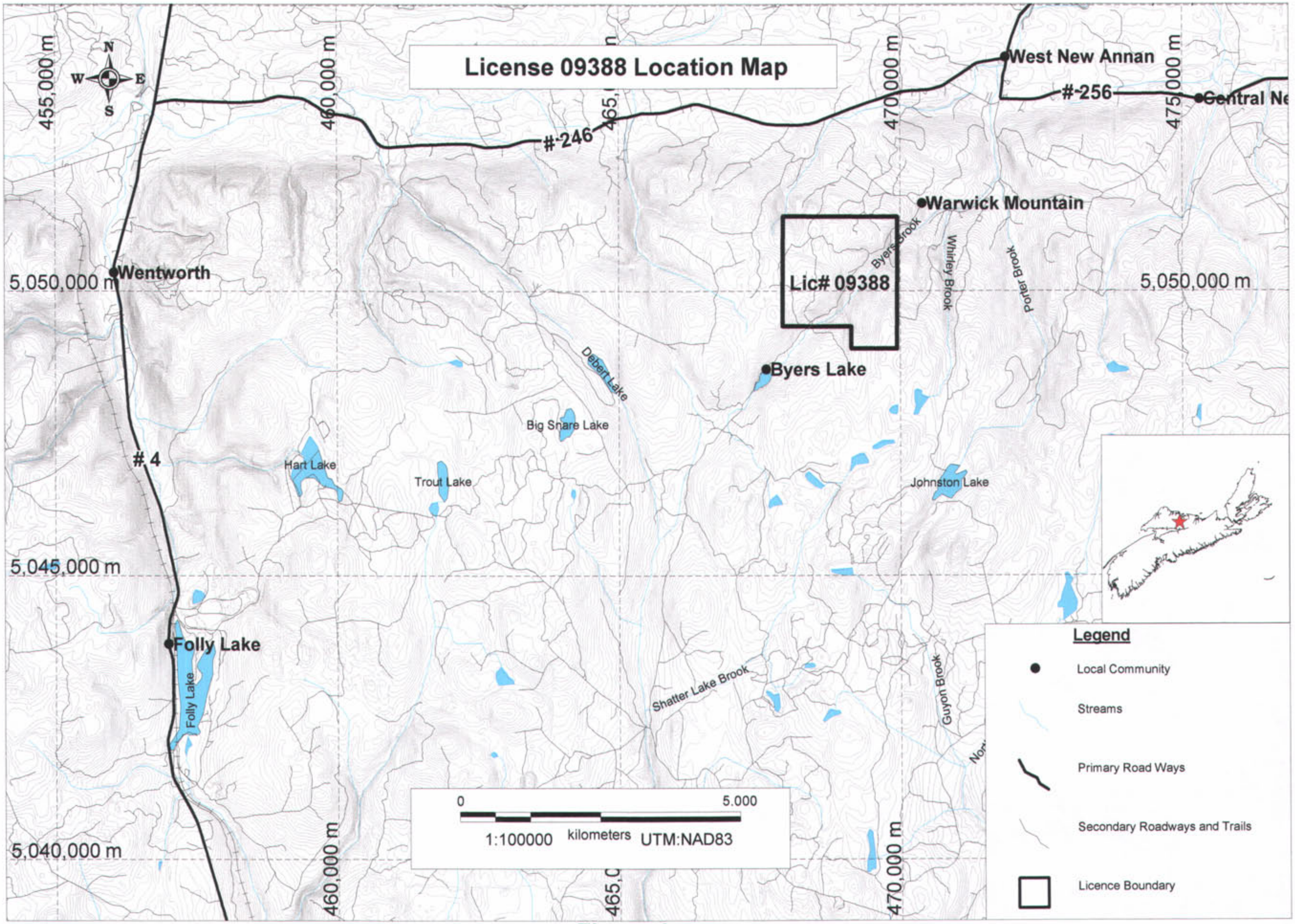
License 09388 Location Map
N
W
E
S
455,000 m
460,000 m
465,
470,000 m
475,000 m
West New Annan
#-256
Central Ne
#-246
Warwick Mountain
Byers Brook
Whirley Brook
Porter Brook
Lic# 09388
Wentworth
5,050,000 m
5,050,000 m
Byers Lake
Debert Lake
Big Snare Lake
4
Hart Lake
Trout Lake
Johnston Lake
5,045,000 m
Folly Lake
Folly Lake
Shatter Lake Brook
Guyon Brook
5,040,000 m
460,000 m
465,0
470,000 m
0
5.000
1:100000
kilometers
UTM:NAD83
Legend
Local Community
Streams
Primary Road Ways
Secondary Roadways and Trails
Licence Boundary

Figure 1

4.0 License Tabulation

License 09388 is composed of 24 claims on NTS map sheet 11E/11B. A detailed breakdown on the tracts and claims can be seen in Table 1 below.

Table 1-09388 Claims List

License #	NTS Map Sheet	Tract	Claims	Anniversary Date
09388	11E/11B	79	ON	10/28/2011
09388	11E/11B	89	ABCFGHJKL	10/28/2011
09388	11E/11B	90	CDEFLMNO	10/28/2011
09388	11E/11B	103	CD	10/28/2011
09388	11E/11B	104	ABC	10/28/2011

5.0 Previous Work

Several exploration programs have been conducted in the Cobequids over the years for both base and precious metals as well as for nuclear fuels. Past work was briefly reviewed in conjunction with the production of this report, but a through compilation of historic work should be undertaken.

1903, first recorded excavation on the property by unknown. This was a 10m long trench over a shear zone (Northcote,1989).

During the late 1970's Gulf Minerals Canada Ltd. carried out an extensive exploration program for Uranium and base metals in the Cobequid highlands. Gulf's program included geological mapping, soil and rock sampling, trenching, and drilling. Gulf also carried out ground and airborne gamma ray spectrometry surveys as well as VLF-EM- magnetometer (Downey, 1978). Unfortunately, Gulf's work was focused to the south of license 09388 with very little work being completed on the small portion of their claims which were on the south part of license 09388.

In 1988, NSDNR geologists re-visited the Byers lake Mineral Occurrence. Their report included a small work history, site visit notes, as well six assay results. One sample recorded 19ppb Au in a rhyolitic tuff wall rock (Northcote, 1989).

In 1989 NS mines and energy conducted regional stream fines and heavy metal concentrates over northern Nova Scotia. Several Au anomalies were report in the Cobequid highlands (Mills, 1989).

In 1990 Seabright conducted a regional exploration program focused on epithermal and/or structurally controlled gold mineralization in the Cobequids. Seabright collected 77 stream sediment samples, 196 soil samples and 57 rock samples. Several of which showed positive Au anomalies, hence reinforcing anomalies discover by Mills in 1989. Seabright suggested that the source of the Au anomalies was in the NW of their property, which is now license 09388.

In 1994 Ecum Secum Enterprises also attempted to source Au anomalies of Mills,1989 and Seabright. 30 stream sediment and 33 rock samples were collected. Ecum Secum obtained their best results in alteration zones in rhyolite and cherty sediments along the contact of the Byers Brook Formation and the overlying Diamond Brook Formation (Black, 1994).

In 2004 Cobequid Gold Corporation Ltd. (CGC) once again attempted to source Au anomalies by prospecting brooks and silt sampling. CGC analyzed the -60 mesh fraction as opposed to the -200 mesh fraction by Seabright and was unable to reproduce Au anomalies. CGC's licenses were east and west of the license 09388, no actual work was completed on the claims comprising current license 09388 (Hudgins, 2004).

6.0 Local and Regional Geology

Regional geology of the area is dominated by four Late Devonian-Early Carboniferous mafic-felsic volcanic and plutonic units as shown in figure 2. This suite of rocks is bound to the north by unconformably overlying late Carboniferous sediments of the Cumberland Basin and to the south by the Rockland Brook fault (RBF) (MacHattie, 2010a). From east to west the units are: the Folly Lake gabbro-diorite (DCd), the Hart Lake-Byers Lake granite (Cg), the Byers Brook Formation (DCB) and the Diamond Brook Formation (DCD-M).

Locally, license 09388 is situated on a fingered contact zone between the BBF and the DBF. A small episode of basaltic flows (DCBb) interbedded with rhyolite flows has been mapped by Donahoe and Wallace on the southern boundary of license 09388.

7.0 Work Preformed

Work performed included Au and Rare Earth prospecting as well as rock and stream sediment sample collection. Historic reports were also collected, perused and stored for later thorough compilation.

The first phase of the project was to map and prospect all roads and trails. Road mapping was completed to establish access points to the property. Prospecting was completed by scanning all roads for radiometric anomalies as thorium has been established as an indicator for rare earth element mineralization (Machattie, 2010). Scans were completed using a Radiation Solutions RS-230 spectrometer in survey mode. The instrument was mounted at waist height (approximately 1m) on the side of the truck or ATV. The instrument was connected via bluetooth to a Holux-M-241 wireless GPS logger. The instrument was set to record total counts per second readings every 1 sec and a GPS location every 5 seconds, therefore 5 readings were collected for every location. The five results were then downloaded to a computer, averaged and plotted on to a map.

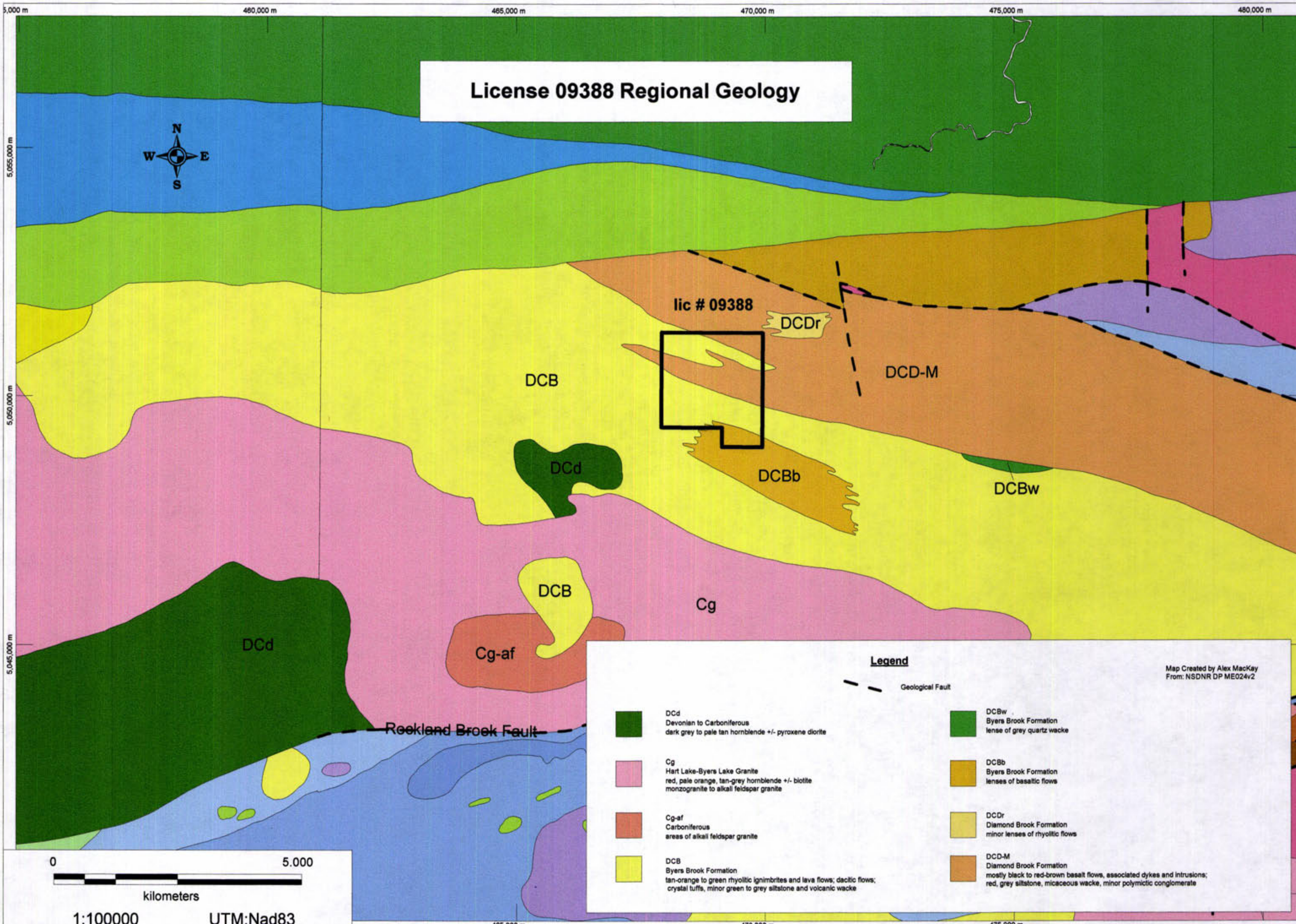
License 09388 Regional Geology
N
S
E
W
460,000 m
465,000 m
470,000 m
475,000 m
480,000 m
5,055,000 m
5,050,000 m
5,045,000 m
lic # 09388
DCDr
DCD-M
DCB
DCd
DCBb
DCBw
DCB
Cg
DCd
Cg-af
Rockland Brook Fault
Legend
Geological Fault
Map Created by Alex MacKay
From: NSDNR DP ME024v2
DCd
Devonian to Carboniferous
dark grey to pale tan hornblende +/- pyroxene diorite
Cg
Hart Lake-Byers Lake Granite
red, pale orange, tan-grey hornblende +/- biotite monzogranite to alkali feldspar granite
Cg-af
Carboniferous
areas of alkali feldspar granite
DCB
Byers Brook Formation
tan-orange to green rhyolitic ignimbrites and lava flows; dacitic flows; crystal tuffs, minor green to grey siltstone and volcanic wacke
DCBw
Byers Brook Formation
lense of grey quartz wacke
DCBb
Byers Brook Formation
lenses of basaltic flows
DCDr
Diamond Brook Formation
minor lenses of rhyolitic flows
DCD-M
Diamond Brook Formation
mostly black to red-brown basalt flows, associated dykes and intrusions; red, grey siltstone, micaceous wacke, minor polymictic conglomerate
0
5.000
kilometers
1:100000
UTM:Nad83

Figure 2

The 2nd phase of work was to complete several small traverses to identify historic mineral occurrences and mine workings as found in NSDNR databases. Rock samples were also collected and XRF'd while a stream sediment sample was panned for Au and XRF'd once dry. Sampling procedure included selecting a mineralized outcrop (usually sulfide mineralization) or an outcrop showing some sort of special textural feature, notes and GPS location were recorded at the time of collection. GPS locations were marked using a Garmin 60CSX GPS receiver (See Appendix B for sample descriptions and locations). Approximately, 1-2 kg of material was collected from each site which is stored for future reference. For samples sent to the lab, half of the sample material was sent to the lab while the remainder is stored for future reference. Two samples were submitted to Dalhousie University Minerals Engineering Centre for analysis by hydrochloric-nitric-hydrofluoric-perchloric acid digestion with a Flame Atomic Absorption (ICP-OES) finish for trace elements, li-metaborate/Li-tetraborate fusion with ICP-OES finish for REE's.

XRF procedure including selecting a fresh face on the sample displaying the interesting feature sought on the sample (ie, a patch of sulfide mineralization, or a rusty zone on the rock). The XRF analyzer was set to 3 beam soil analysis mode for 15 seconds per beam. In order to limit the amount of data, the analyzer was set to only export elements of interest. For this property elements of interest were REE indicators yttrium (Y), zirconium (Zr) niobium (Nb) and thorium (Th), also of interest is results for gold (Au) as such gold results were set to export as well. Results presented are in the units of uncorrected ppm values as no known material was available to generate correction factors.

The 3rd work phase was to collect heavy mineral concentrates from stream sediments using a Keene Engineering A52 sluice box. The sluice box was set-up in the river, downstream from a rusty, silicified sequence of rock and adjacent to a large 10m x 5m sand and gravel bar along river bank. Five natural trap sites were selected from the sand and gravel bar and two 2 gallon buckets (20-25lbs/bucket) filled from each of the five traps. Buckets of material were fed through a ¼" screen emptying directly into the sluice. +¼" material was inspected for mineralization and discarded. Upon completion of processing of all five sites, the sluice box was carefully removed from the river and the concentrated heavy minerals were collected in a five gallon bucket, which was then tagged and transported back to the lab for further processing.

The first step of processing was to dry the samples. This was done by putting the samples in an enclosed air tight drying room with a dehumidifier. Samples generally took 3-4 days to dry completely. When the sample was dry, the sample was classified by size fraction. This was accomplished using a Ro-tap testing sieve shaker. Sieve sizes are available in table 2 below.

Table 2-Sieve Size Fractions

Size	Tyler Equilivalent	US Sieve #
1.7mm	10 mesh	No. 12
1.00mm	16 mesh	No. 18
355µm	42 mesh	No. 45
250µm	60 mesh	No. 60
180µm	80 mesh	No. 80

The 10 mesh sieve was used primarily to remove the coarsest material. +10 and +16 material was inspected and retained for later analysis if necessary. Material from size fractions, -16 +42, -42 +60, -60 +80 and -80 was collected and put into 3.5cm diameter plastic vials. Vials were fitted with a thin plastic cover retained by a rubber band. The vials were then placed upside on the XRF analyzer in a test stand so that X-ray beam went through the thin plastic cover as opposed to the thicker plastic of the container. Data collected from the analyzer was similar to that collected for rocks in that only elements of interest (Y, Zr, Nb, Th, Au) were exported from the analyser and units are uncorrected ppm units. Analyser settings were the same as well; 3 beam soil mode for 15 seconds per beam.

Figure 3-Vial used for XRF analysis

Figure 4-XRF analyzer in test stand

Upon completion of XRF analyses samples were inspected for visible gold grains. As there was not enough material from each sample fraction to utilize the Wilfley Table, the different fractions were carefully hand panned. The resulting heavies were inspected under a binocular microscope for visible gold grains. See Results in Table 3.

8.0 Results of Work

Traverses turned up some interesting rocks. Particularly, a grey clay like fault gouge with over 5% sulfides from station BB-08b, and similar colour grey rock, probably silicified basalt with over 5% sulfides from station BB-08a. Both materials were submitted to Dalhousie dept. of Minerals Engineering for analyses. Results were generally discouraging for all types of mineralization. See Appendix C for analysis methodology and results. All other rocks collected, including several outcrops of sulfide mineralized basalts were analyzed with the XRF analyzer. XRF results were generally discouraging, with only one small kick for gold at station BB-10. Uncorrected XRF results are available in Appendix B.

Panning of a the semi consolidated grey clay from station BB-08 in the river bed yielded concentrated pyrite but no results for Au were obtained with the XRF or through visual inspection. See Appendix B for XRF results.

Sieved sluice fractions did reveal some small traces of gold in XRF analysis in the +60,-42 mesh and -60,+80 mesh fractions. Unfortunately, no gold grains were observed as part of the gold grain counting process. See table 3 below for results.

Table 3-Au XRF and Microscope results for sieved sluice fractions

Station	Size Fraction	XRF for Au	XRF Au +/-	Microscope Gold Grain Counting Results
BB-12	+42,-16	-12	22	Black sand + red hematite + minor dark grey and silvery arsenopyrite, no VG
BB-12	+60,-42	26	18	Mostly black sand, minor hematite, very minor arsenopyrite, No VG
BB-12	-60,+80	25	19	Mostly black sand, minor hematite, very minor arsenopyrite, No VG
BB-12	-80	1	19	Mostly black sand, minor hematite, very minor arsenopyrite, No VG

The spectrometer survey for REE's failed to turn up any significant anomalies. Only a few small Nb kicks were recorded in the XRF analysis. REE results were essentially nil from the ICP-OES analysis at Dalhousie. See Appendix A for spectrometer data, Appendix B for XRF analysis results and Appendix C for ICP-OES results.

9.0 Conclusions and Recommendations

Historic stream anomalies have still not been sourced, but traces of Au were detected in the 2011 work program. Further work including more rock sample analysis and stream sediments should conducted in 2012.

10.0 References

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Northcote, K.E., Demont G., Armitage A. 1989: Open file report on Selected Mineral Occurrences of the Cobequid Area, Nova Scotia NTS 11E/05, 11E/06, 11E/10, 11E/11, 11E/12, 21H/08; Nova Scotia Dept. of Mines and Energy; Open File Report 89-005

11.0 Statement of Qualifications

I, S. Alex Mackay of Westville, Nova Scotia do hereby swear to be a qualified author for Nova Scotia exploration assessment reports. Qualifications stem from degrees obtained from Dalhousie University of Halifax, Nova Scotia Canada.

-BSc. Earth Science & Physics (2008)

-Dip. of Engineering (2003)

In addition to degree qualifications, I have 3+ years of professional work experience including report writing, as well as Au and REE exploration experience in Nova Scotia and abroad.

Alex MacKay

Appendix A

Spectrometer Survey Results

X_Nad83	Y_Nad83	Total_0_	Total_1_	Total_2_	Total_3_	Total_4_	average
467980	5050109	243	283	253	253	241	254.6
468023	5050086	229	237	194	223	244	225.4
468016	5050091	256	269	268	297	307	279.4
468009	5050097	284	238	222	302	296	268.4
468002	5050104	262	259	245	293	257	263.2
467995	5050106	270	272	263	268	273	269.2
467988	5050106	288	313	287	261	280	285.8
467973	5050116	236	243	232	248	234	238.6
467965	5050116	231	206	239	240	225	228.2
467956	5050116	193	175	183	189	214	190.8
467945	5050115	216	222	210	204	205	211.4
467938	5050117	248	213	217	190	238	221.2
467930	5050120	170	181	196	215	183	189
467923	5050122	166	158	151	187	167	165.8
467915	5050119	140	162	143	162	146	150.6
468179	5050105	243	250	232	212	223	232
468167	5050100	245	223	249	239	208	232.8
468173	5050102	246	227	240	237	241	238.2
468068	5050032	207	146	140	148	146	157.4
468068	5050037	124	160	145	141	146	143.2
468066	5050039	168	171	192	174	171	175.2
468065	5050016	231	203	206	211	220	214.2
468068	5049999	199	216	196	237	211	211.8
468073	5049983	209	224	197	225	231	217.2
468082	5049961	253	236	238	226	236	237.8
468079	5049974	219	226	223	197	209	214.8
468079	5049949	261	221	264	269	267	256.4
468081	5049936	291	278	258	241	280	269.6
468082	5049923	225	259	255	224	239	240.4
468085	5049908	249	243	226	222	198	227.6
468087	5049897	229	165	106	126	157	156.6
468085	5049749	210	193	205	218	196	204.4
468087	5049769	336	361	337	282	318	326.8
468085	5049780	316	406	364	414	393	378.6
468087	5049794	410	359	341	338	312	352
468081	5049759	256	223	232	214	220	229
468081	5049745	209	241	211	232	220	222.6
468081	5049730	215	227	234	245	234	231
468080	5049713	211	217	230	210	216	216.8
468090	5049804	330	347	342	371	387	355.4
468093	5049816	366	324	307	289	298	316.8
468095	5049831	290	309	293	277	251	284
468097	5049842	229	269	245	208	191	228.4
468098	5049855	181	198	215	198	252	208.8
468098	5049868	209	187	201	183	186	193.2
468091	5049886	155	134	136	175	217	163.4
468094	5049874	182	200	168	171	182	180.6
468075	5050050	224	238	199	225	227	222.6
468037	5050075	228	217	222	229	209	221
468062	5050045	194	189	213	218	204	203.6
468057	5050053	238	198	217	209	217	215.8
468052	5050058	183	223	208	256	229	219.8
468047	5050063	209	207	210	206	221	210.6
468043	5050069	188	204	250	201	211	210.8
468030	5050081	222	216	225	257	215	227
468065	5050041	232	278	279	248	242	255.8
468118	5050069	266	277	273	299	280	279
468129	5050073	248	237	263	258	250	251.2
468140	5050080	265	232	281	243	258	255.8
468147	5050086	225	238	227	225	247	232.4
468157	5050095	229	216	248	244	240	235.4
468111	5050066	235	279	243	219	225	240.2
468096	5050063	225	188	189	171	187	192
468083	5050056	198	196	205	234	272	221
468073	5050045	230	242	194	199	201	213.2
468102	5049631	225	190	176	206	173	194
468097	5049639	207	200	197	201	190	199
468094	5049647	178	180	227	227	191	200.6
468091	5049654	165	182	180	189	177	178.6
468091	5049661	141	145	160	172	226	168.8
468087	5049685	216	228	217	282	241	236.8
468084	5049693	233	225	223	240	242	232.6
468085	5049703	245	252	288	252	272	261.8
468084	5049687	232	244	262	308	280	265.2
468087	5049676	303	285	296	277	264	285
468089	5049668	264	220	230	158	199	214.2
468107	5049620	204	201	204	223	206	207.6
468114	5049608	213	214	237	218	254	227.2
468120	5049598	286	267	250	260	247	262
468146	5049534	235	205	235	234	261	234
468145	5049543	237	231	217	259	210	230.8
468126	5049586	228	246	230	230	255	237.8
468130	5049579	263	273	257	221	237	250.2

468135	5049571	245	233	239	235	249	240.2
468138	5049564	250	238	222	245	227	236.4
468141	5049553	240	272	226	217	241	239.2
468149	5049518	247	259	251	250	260	253.4
468149	5049511	288	292	246	274	271	274.2
468194	5049436	288	334	271	254	259	281.2
468189	5049440	261	271	281	274	213	260
468181	5049444	281	275	219	246	239	252
468177	5049453	235	233	232	242	236	235.6
468174	5049460	217	258	259	232	268	246.8
468169	5049465	267	218	239	268	239	246.2
468165	5049471	267	257	224	267	251	253.2
468160	5049480	272	258	283	272	284	273.8
468155	5049488	248	287	243	250	261	257.8
468151	5049498	263	252	253	241	243	250.4
468187	5050109	206	210	187	221	180	200.8
468194	5050113	232	219	253	237	202	228.6
468200	5050118	194	174	162	146	176	170.4
468208	5050125	187	248	231	198	214	215.6
468217	5050130	214	191	166	180	167	183.6
468226	5050133	178	177	164	176	172	173.4
468243	5050139	250	238	249	250	240	245.4
468253	5050141	247	232	246	233	264	244.4
468260	5050144	211	239	273	259	220	240.4
468266	5050147	231	236	208	199	193	213.4
468283	5050150	244	266	283	241	247	256.2
468276	5050149	207	195	209	231	249	218.2
468299	5050164	281	325	269	250	222	269.4
468289	5050157	267	254	223	224	227	239
468333	5050224	117	111	126	99	148	120.2
468330	5050234	126	116	112	123	114	118.2
468328	5050241	129	107	122	104	108	114
468323	5050250	129	112	136	100	132	121.8
468331	5050217	121	139	154	127	146	137.4
468327	5050204	191	188	197	223	211	202
468323	5050194	193	156	183	165	169	173.2
468316	5050183	234	220	247	247	218	233.2
468308	5050172	207	244	212	247	268	235.6
468328	5050298	138	103	133	103	105	116.4
468340	5050348	93	113	103	94	116	103.8
468338	5050338	118	109	127	118	95	113.4
468335	5050330	117	108	99	111	101	107.2
468334	5050324	96	109	105	102	126	107.6
468333	5050318	106	114	99	83	109	102.2
468330	5050312	114	102	109	120	118	112.6
468329	5050305	124	109	144	111	116	120.8
468327	5050291	96	95	99	95	112	99.4
468327	5050282	86	115	89	103	85	95.6
468326	5050276	84	94	92	79	99	89.6
468325	5050269	114	101	107	108	123	110.6
468324	5050259	128	116	109	106	124	116.6
468233	5049407	241	256	246	233	304	256
468252	5049398	211	217	222	222	204	215.2
468243	5049403	179	196	220	249	242	217.2
468224	5049413	242	257	227	270	249	249
468217	5049419	232	284	290	267	261	266.8
468206	5049427	252	266	257	236	241	250.4
468201	5049431	255	280	274	312	277	279.6
468305	5049390	225	265	214	231	234	233.8
468296	5049388	204	257	224	243	240	233.6
468286	5049389	247	234	248	245	249	244.6
468276	5049390	233	237	243	271	241	245
468263	5049393	224	242	260	223	228	235.4
468364	5049395	195	193	188	193	195	192.8
468346	5049392	198	195	214	209	225	208.2
468351	5049388	226	238	261	207	218	230
468335	5049392	196	206	228	224	229	216.6
468330	5049389	239	217	209	230	253	229.6
468325	5049391	240	254	259	226	254	246.6
468315	5049388	248	193	218	251	193	220.6
468375	5049410	161	184	162	163	163	166.6
468389	5049422	167	163	179	215	169	178.6
468407	5049437	148	181	215	211	207	192.4
468421	5049446	199	179	213	221	215	205.4
468434	5049460	190	191	201	196	198	195.2
468569	5049550	193	165	182	163	165	173.6
468451	5049473	199	214	188	201	166	193.6
468465	5049488	172	188	208	196	196	192
468482	5049502	197	191	188	197	190	192.6
468500	5049516	172	186	184	200	188	186
468517	5049526	162	163	148	155	148	155.2
468536	5049534	163	167	190	195	184	179.8
468551	5049542	230	196	222	213	214	215
468589	5049558	153	169	184	155	168	165.8

468609	5049565	180	193	165	153	191	176.4
468625	5049575	188	181	182	208	213	194.4
468642	5049587	215	216	216	228	175	210
468661	5049592	198	223	211	217	188	207.4
468683	5049591	203	207	177	163	180	186
468702	5049592	182	225	199	223	193	204.4
468721	5049602	173	209	194	196	203	195
468735	5049618	227	243	215	206	209	220
468745	5049640	197	184	208	196	227	202.4
468754	5049664	201	199	207	221	235	212.6
468775	5049681	241	219	219	172	194	209
468798	5049698	224	194	197	207	173	199
468818	5049710	181	179	221	200	184	193
468840	5049713	219	204	185	197	189	198.8
468850	5049714	198	202	174	170	196	188
468831	5049708	201	205	196	197	201	200
468863	5049716	219	243	264	261	209	239.2
468874	5049728	232	197	242	249	259	235.8
468883	5049744	242	236	240	221	212	230.2
468886	5049762	220	241	222	217	245	229
468886	5049777	218	223	236	245	263	237
468887	5049798	302	233	261	226	233	251
468892	5049820	233	252	238	259	231	242.6
468951	5049944	196	173	174	194	193	186
468936	5049907	221	214	234	228	224	224.2
468899	5049835	254	247	265	228	241	247
468905	5049848	205	217	237	245	232	227.2
468913	5049861	195	218	195	192	197	199.4
468922	5049876	193	231	215	233	214	217.2
468932	5049896	223	230	228	216	218	223
468936	5049902	199	260	230	249	216	230.8
468936	5049915	216	227	225	205	229	220.4
468939	5049919	210	213	234	206	193	211.2
468944	5049930	195	196	214	171	191	193.4
468962	5049954	161	192	219	182	188	188.4
468973	5049963	200	218	214	203	233	213.6
468985	5049979	196	214	226	209	197	208.4
468995	5050002	205	207	161	194	180	189.4
469003	5050018	182	186	185	171	188	182.4
469093	5050210	190	189	190	170	197	187.2
469011	5050041	193	176	180	165	172	177.2
469021	5050064	181	156	148	173	157	163
469036	5050084	172	163	147	176	197	171
469048	5050105	203	222	189	191	217	204.4
469061	5050124	195	208	174	200	172	189.8
469072	5050146	212	172	176	186	202	189.6
469081	5050170	204	237	249	259	268	243.4
469088	5050191	275	289	270	195	212	248.2
469098	5050231	204	207	246	225	288	234
469109	5050248	258	266	262	249	271	261.2
469133	5050259	288	261	263	238	226	255.2
469152	5050265	233	215	227	236	229	228
469163	5050281	227	193	198	246	199	212.6
469179	5050300	220	201	239	279	292	246.2
469193	5050319	247	225	208	210	224	222.8
469209	5050340	238	212	219	199	180	209.6
469429	5050563	127	124	153	107	111	124.4
469224	5050354	215	192	184	183	194	193.6
469232	5050369	173	202	185	197	201	191.6
469236	5050374	172	158	162	182	182	171.2
469243	5050382	193	240	191	201	216	208.2
469251	5050389	204	178	189	202	225	199.6
469258	5050395	258	251	236	202	196	228.6
469269	5050402	175	194	194	171	164	179.6
469283	5050411	151	220	168	158	136	166.6
469301	5050420	170	119	192	224	207	182.4
469320	5050431	187	171	184	201	157	180
469341	5050451	164	182	144	163	148	160.2
469355	5050471	163	164	166	181	148	164.4
469370	5050491	181	160	185	180	142	169.6
469384	5050505	134	132	129	161	144	140
469393	5050512	154	164	164	126	160	153.6
469399	5050517	152	146	152	147	145	148.4
469408	5050527	157	182	165	151	141	159.2
469419	5050543	141	145	128	145	143	140.4
469437	5050587	143	120	139	148	138	137.6
469445	5050609	137	155	123	181	175	154.2
469448	5050634	155	154	182	182	173	169.2
469453	5050653	174	154	166	161	156	162.2
469459	5050654	169	140	172	182	184	169.4
469478	5050646	194	177	159	186	199	183
469735	5050792	149	145	124	175	162	151
469498	5050652	204	184	173	166	169	179.2
469525	5050662	131	144	151	126	120	134.4

469556	5050672	151	127	155	149	134	143.2
469586	5050687	127	89	140	155	152	132.6
469611	5050707	129	156	115	138	161	139.8
469639	5050715	155	145	154	167	117	147.6
469668	5050719	128	132	134	145	134	134.6
469690	5050724	137	125	105	142	139	129.6
469715	5050737	155	159	138	146	162	152
469732	5050763	151	171	144	135	156	151.4
469740	5050817	149	167	158	159	178	162.2
469748	5050841	149	160	153	165	171	159.6
469761	5050863	187	162	163	181	160	170.6
469773	5050893	160	167	168	181	171	169.4
469783	5050921	191	178	208	193	203	194.6
469790	5050947	202	235	202	170	189	199.6
469798	5050973	187	180	163	150	148	165.6
469822	5050994	156	158	163	158	150	157
469842	5051021	154	150	161	173	163	160.2
469854	5051048	160	185	188	169	160	172.4
469860	5051068	162	175	164	143	165	161.8
469873	5051083	137	140	150	139	136	140.4
469902	5051093	127	150	164	140	160	148.2
469932	5051102	145	135	146	127	153	141.2
469683	5049269	221	217	237	199	233	221.4
469683	5049269	209	225	224	211	246	223
469683	5049269	229	245	225	172	239	222
469683	5049269	238	237	228	223	240	233.2
469683	5049269	226	205	235	229	204	219.8
469683	5049260	198	239	236	216	207	219.2
469684	5049274	201	231	225	239	236	226.4
469685	5049236	205	215	203	210	192	205
469685	5049248	223	179	223	223	183	206.2
469685	5049282	212	195	205	210	211	206.6
469685	5049286	203	239	220	216	255	226.6
469685	5049290	197	196	197	175	197	192.4
469685	5049297	199	195	193	195	212	198.8
469686	5049304	215	208	193	209	186	202.2
469687	5049311	174	168	211	231	218	200.4
469689	5049316	215	215	193	194	168	197
469689	5049324	162	158	155	163	144	156.4
469689	5049332	143	170	194	164	174	169
469690	5049342	175	168	163	147	157	162
469691	5049351	119	154	138	155	113	135.8
469690	5049361	119	151	185	167	142	152.8
469703	5049192	283	303	252	265	275	275.6
469694	5049208	226	190	172	244	214	209.2
469689	5049223	238	214	246	231	232	232.2
469710	5049458	149	148	198	153	181	165.8
469690	5049371	138	125	155	148	129	139
469693	5049381	169	165	171	169	156	166
469695	5049391	130	146	117	130	156	135.8
469698	5049399	158	125	128	150	139	140
469700	5049409	150	188	186	190	183	179.4
469701	5049421	191	180	187	233	248	207.8
469702	5049434	225	231	227	199	227	221.8
469707	5049450	192	179	168	167	190	179.2
469711	5049465	183	197	174	158	127	167.8
469712	5049472	128	139	144	172	143	145.2
469715	5049479	187	173	180	152	184	175.2
469717	5049484	154	181	177	153	160	165
469719	5049491	157	175	187	164	168	170.2
469720	5049497	175	179	166	208	186	182.8
469723	5049511	198	184	177	151	164	174.8
469721	5049506	157	149	193	167	171	167.4
469706	5049440	209	161	196	193	177	187.2
469707	5049445	203	205	199	248	206	212.2
469715	5049450	246	254	238	195	148	216.2
469722	5049455	197	207	256	223	262	229
469729	5049459	287	247	258	234	250	255.2
469738	5049461	272	237	252	258	272	258.2
469724	5049520	177	197	211	216	177	195.6
469727	5049526	191	198	177	207	193	193.2
469729	5049533	189	177	162	149	176	170.6
469731	5049540	154	160	158	132	156	152
469733	5049547	136	123	129	115	143	129.2
469736	5049553	135	144	154	144	139	143.2
469738	5049560	156	157	164	187	197	172.2
469739	5049569	146	130	148	132	185	148.2
469742	5049574	150	170	214	177	169	176
469744	5049582	135	140	148	121	115	131.8
469746	5049588	135	150	149	182	209	165
469750	5049594	209	217	207	182	186	200.2
469752	5049602	183	188	191	177	202	188.2
469757	5049609	196	168	182	212	182	188
469760	5049615	193	173	222	223	208	203.8

469730	5049538	172	182	140	183	155	166.4
469719	5049129	168	184	198	211	228	197.8
469730	5049131	206	173	171	182	172	180.8
469764	5049131	203	203	215	237	201	211.8
469752	5049131	227	200	167	216	243	210.6
469742	5049132	226	273	248	236	213	239.2
469716	5049127	171	187	168	200	258	196.8
469680	5049107	256	249	243	261	233	248.4
469682	5049108	232	233	252	237	258	242.4
469686	5049111	247	245	237	225	240	238.8
469691	5049114	275	235	229	255	245	247.8
469702	5049119	247	244	246	236	240	242.6
469698	5049119	224	206	253	227	228	227.6
469695	5049116	221	220	200	225	224	218
469710	5049124	160	200	183	185	147	175
469728	5049142	164	162	210	170	152	171.6
469725	5049154	169	198	230	219	182	199.6
469720	5049164	192	165	206	182	184	185.8
469716	5049173	164	183	161	155	169	166.4
469710	5049181	182	170	232	222	270	215.2
469726	5049134	196	219	193	209	186	200.6
469733	5049130	216	247	208	182	222	215
469763	5049625	225	173	185	197	203	196.6
469769	5049633	196	157	177	190	202	184.4
469783	5049658	148	137	141	141	151	143.6
469775	5049644	162	176	170	168	179	171
469762	5049618	170	171	199	160	168	173.6
469799	5049693	138	172	171	140	159	156
469806	5049691	164	184	193	164	175	176
469799	5049686	203	171	165	158	172	173.8
469799	5049680	180	167	167	189	161	172.8
469799	5049675	180	167	198	194	204	188.6
469797	5049670	180	164	193	199	186	184.4
469792	5049665	183	171	176	174	182	177.2
469810	5049725	222	203	181	221	190	203.4
469807	5049728	176	213	176	204	189	191.6
469807	5049728	197	173	192	217	183	192.4
469798	5049484	261	193	218	212	232	223.2
469745	5049465	282	317	294	294	299	297.2
469753	5049469	279	273	267	291	264	274.8
469761	5049473	300	278	252	235	242	261.4
469771	5049478	234	249	248	274	282	257.4
469783	5049481	309	315	287	337	313	312.2
469792	5049484	375	355	342	300	325	339.4
469808	5049481	241	222	187	185	183	203.6
469822	5049478	180	181	169	167	157	170.8
469838	5049473	161	139	173	185	206	172.8
469854	5049471	188	218	217	214	237	214.8
469870	5049469	245	225	285	209	190	230.8
469811	5049720	191	200	209	184	191	195
469812	5049710	112	143	131	135	116	127.4
469812	5049704	114	133	109	138	135	125.8
469812	5049703	94	96	88	118	128	104.8
469813	5049695	113	116	114	136	115	118.8
469811	5049691	132	128	143	153	179	147
469812	5049124	251	228	232	231	241	236.6
469882	5049466	169	215	272	311	303	254
469897	5049464	315	298	291	281	299	296.8
469910	5049471	293	321	298	295	342	309.8
469918	5049478	188	196	185	181	156	181.2
469927	5049488	123	109	108	137	137	122.8
469932	5049494	107	109	144	168	192	144
469937	5049500	189	160	144	163	154	162
469940	5049506	139	143	152	124	93	130.2
469922	5049484	185	222	297	316	286	261.2
469913	5049476	289	308	310	303	282	298.4
469843	5049006	141	135	156	152	151	147
469841	5048994	184	165	156	152	183	168
469848	5049036	215	232	198	182	192	203.8
469850	5049047	199	184	186	202	203	194.8
469851	5049059	170	124	170	134	160	151.6
469851	5049071	164	224	238	206	245	215.4
469849	5049083	210	191	127	99	122	149.8
469844	5049096	134	215	233	221	239	208.4
469837	5049107	231	191	259	242	238	232.2
469832	5049115	216	242	228	208	261	231
469826	5049121	228	243	240	248	198	231.4
469821	5049123	249	242	230	234	247	240.4
469803	5049130	215	194	249	249	228	227
469789	5049132	281	253	236	254	172	239.2
469774	5049130	187	179	171	219	242	199.6
469845	5049019	151	156	166	154	186	162.6
469841	5048997	174	211	201	216	196	199.6

Appendix B

Station Locations and uncorrected XRF Results

Results as presented are uncorrected. Manufacturers of the XRF analyzer recommend testing known samples and generating correction factors for each element. Currently, such samples are unavailable so results can only be used to look for anomalous values rather than absolute ppm values. Negative values indicate values below detection limits.

Station	X	Y	Notes	XRF	Y	Y +/-	Zr	Zr +/-	Nb	Nb +/-	Au	Au +/-	Th	Th +/-
BB-01a	469680	5049268	Rhyolitic outcrop with rusty patches, high pyrite,	Yes	2293	115	1937	90	5085	474	43	23	-163	211
BB-01b	469680	5049268	rusty outcrop, high pyrite, possible wacke, from same outcrop as BB-01a,	Yes	1183	105	1098	66	2098	392	29	26	-69	228
BB-02a	468290	5050159	rhyolitic outcrop, highly altered by silification, pyrite mineralization	Yes	2173	127	1802	93	4806	528	6	24	796	280
BB-02b	468290	5050159	possible wacke sequence from sample outcrop as BB-02a, highly silicified with pyrite	yes	2492	111	1590	68	3609	362	-17	19	-32	180
BB-03	469761	5050662	unconsolidated clay panned from river, clay was rich in sulfides and grey in colour, black magnetic sand as well as fine quartz were observed in addition to abundant pyrite	yes	-528	70	38	7	1428	261	9	36	474	172
BB-04	469629	5050577	Basalt outcrop, non magnetic, dark grey with blackish and greenish patches, also a magnetic fine grained mafic intrusive in the area which was not sampled	yes	458	48	232	12	1255	194	-6	15	97	133
BB-05	469833	5050593	rusty suboutcrop with quartz flooding, probably highly silificed basalt	no										
BB-06	469858	5050831	Greenish highly silicified basalt with pyrite	yes	1639	57	486	15	6225	303	1	11	567	122
BB-07	469909	5050936	old mine portal, silicified rhyolite with pyrite mineralization	yes	1128	48	426	12	4055	219	7	11	445	101
BB-08a	469931	5050968	light grey silicified rhyolite/basalt mix, high pyrite	yes	1224	49	760	20	5060	247	3	14	391	107
BB-08b*	469931	5050968	Unconsolidated grey clay with sulfides	yes	-528	70	38	7	1428	261	9	36	474	172
BB-09	469844	5051057	contact rhyolite and basalt, rich in sulfides	no										
BB-10	469494	5050618	basalt with pyrite mineralization	yes	269	53	109	8	687	177	36	28	222	127
BB-11	470010	5051072	E-W trending fault in dark grey Basalt showing minor pyrite	yes	-88	63	5	3	370	148	-13	26	102	103
BB-12	469864	5050761	sluice site	no										

Appendix C

Lab Results and Methodology

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Quantitative Trace Element Analysis of Rocks, Ores, etc.

(Copper, lead, zinc, nickel, cobalt, bismuth, chromium, lithium, manganese, cadmium, vanadium, antimony, silver, molybdenum, boron, barium, beryllium, calcium, iron, potassium, sodium, phosphorous, sulphur, selenium, silica, tin, strontium, titanium, tungsten, zirconium, & arsenic)

1 gram samples are digested with hydrochloric-nitric-hydrofluoric-perchloric acids. Elements are determined by Flame Atomic Absorption or ICP OES with detection limit of 1 ppm. Some of the refractory elements, such as zirconium, titanium, and chromium, may only be partially extracted. Arsenic can also be determined by atomic absorption/hydride generation method for low detection limit.

Soil and rock samples may also be digested with aqua regia only to partially extract soluble elements (i.e. an aliquot may be taken from the aqua regia leach on gold digestion to be used in base metal determination). On a 10 gram sample, the detection limit is 0.1 ppm base metals. Arsenic detection limit is 1 ppb on a 10 gram sample using the hydride generation atomic absorption technique.

Reference standards from CANMET and NRC Canada are used to check the accuracy of the analysis.

DALHOUSIE UNIVERSITY
Inspiring Minds

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Rare Earth Analysis (REE's)

(Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Sc, Tb, Tm, Y, Yb)

Samples (0.1 to 0.5g) are mixed with a flux of lithium metaborate and lithium tetraborate (2.5g). The mix is placed in platinum crucibles and fused using a Claisse M4 fluxer at 1050°C. The fusion is leached with 90 ml of 1:9 nitric acid in a teflon 150ml beaker. The solution is transfered into a 250ml volumetric flask. The flasks are made up to the 250ml mark, topped, and shaken. Dilutions may be required for analysis for some elements. The elements are determined by ICP OES. Certified reference samples are analyzed with the samples to ensure that the fusions, digestions, and ICP OES analysis are complete and accurate.

Detection limits will vary depending on sample type and spectral interferences. In general, REE detection limits are between 5 to 10 mg/kg.

REE Results:

Sample	mg/kg									
	Ce	Dy	Er	Eu	Gd	Ho	La	Lu	Nd	Pr
ElkExp BB Clay	73	9	<10	4	<10	<10	35	4	61	<10
ElkExp BB Rock	51	3	<10	3	<10	<10	27	2	44	<10
TRM-2 (RE Standard)	29726	231	74	217	441	24	18836	10	8420	2579
Expected Value	29000	206	80	212	553	37	19300	8	8900	2800
Confidence Level	± 1200	± 32	± 8.5	± 16.2	± 83	± 7.4	± 1000	± 1.1	± 800	± 300

Sample	mg/kg						
	Sc	Sm	Tb	Th	Tm	Y	Yb
ElkExp BB Clay	37	10	<10	<100	<10	69	7
ElkExp BB Rock	17	<10	<10	<100	<10	30	4
TRM-2 (RE Standard)	10	1120	58	246	<10	1018	59
Expected Value	NA	900	55	217	NA	959	55
Confidence Level	NA	± 300	± 14.2	± 40	NA	± 40	± 5.24

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21-Oct-11

Elk Exploration Ltd
11 River Rd.
Terence Bay River, N.S.,
B3T 1K2
Attention: Lindsay Allen

Re: Analysis on submitted solid samples.
Near total acid digestion, ICP OES finish.

Sample	mg/kg							
	Ag	Al	As	Ba	Be	Bi	Ca	Cd
BB Clay	<1	77609	22	210	5.0	<10	24597	3
BB Rock	<1	51021	14	43	1.7	<10	2135	3

Sample	mg/kg							
	Ce	Co	Cr	Cu	Fe	Ga	Ge	In
BB Clay	69	88	79	54	104608	41	<100	<100
BB Rock	60	33	47	41	75848	22	<100	<100

Sample	mg/kg							
	K	La	Li	Mg	Mn	Mo	Na	Nb
BB Clay	19984	27	53	24128	743	2	1674	40
BB Rock	1542	24	203	40071	1105	2	1068	29

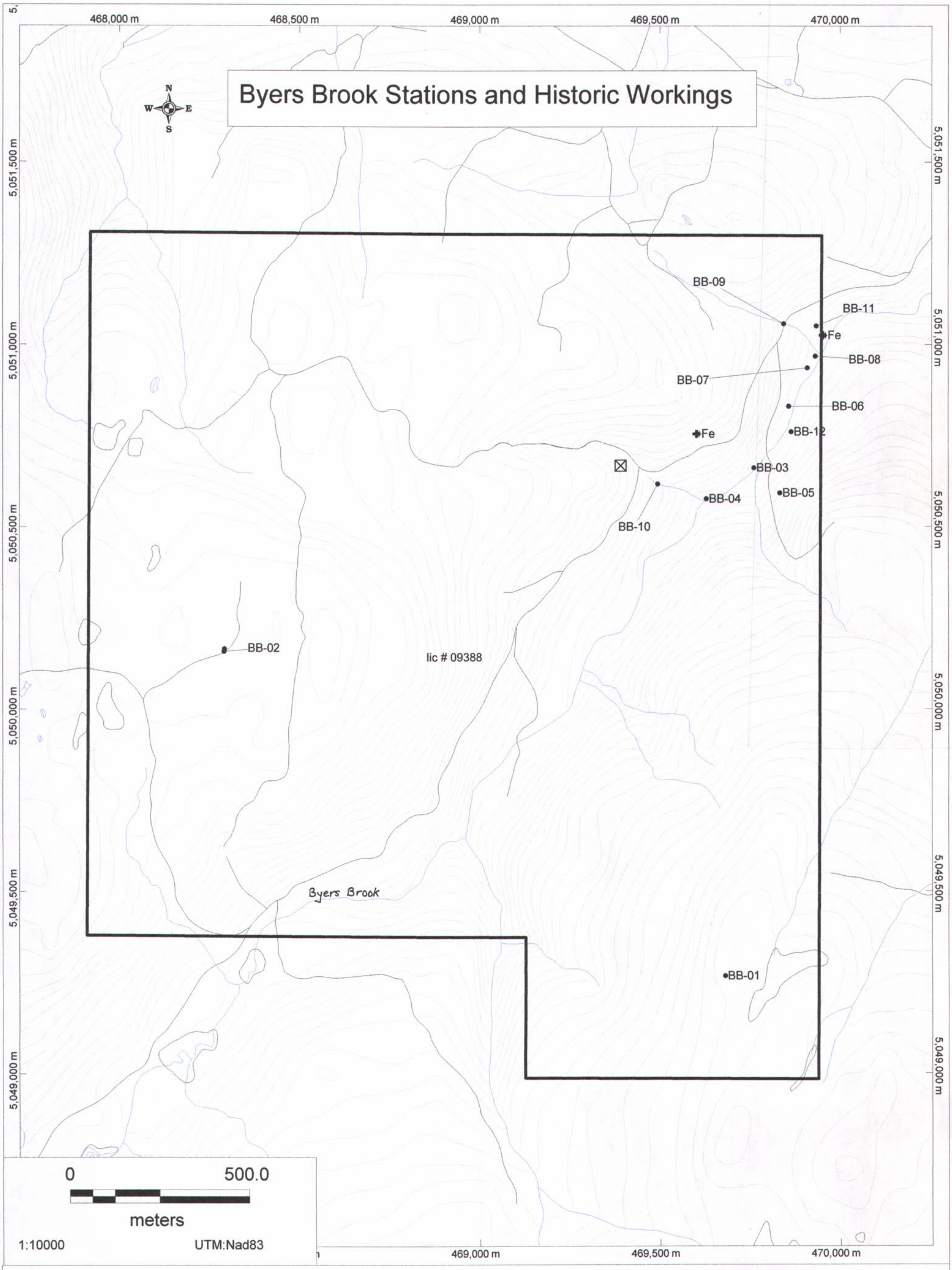
Sample	mg/kg							
	Ni	P	Pb	S	Sb	Se	Sn	Sr
BB Clay	87	3143	73	106595	<50	<50	<50	29
BB Rock	50	1379	44	46264	<50	<50	<50	16

Sample	mg/kg							
	Ta	Te	Ti	Tl	V	W	Zn	Zr
BB Clay	<50	<100	17813	<100	146	<50	264	210
BB Rock	<50	<100	9029	<100	270	<50	150	111

Daniel Chevalier, MASc
Manager, Minerals Engineering Centre

Appendix D

Maps



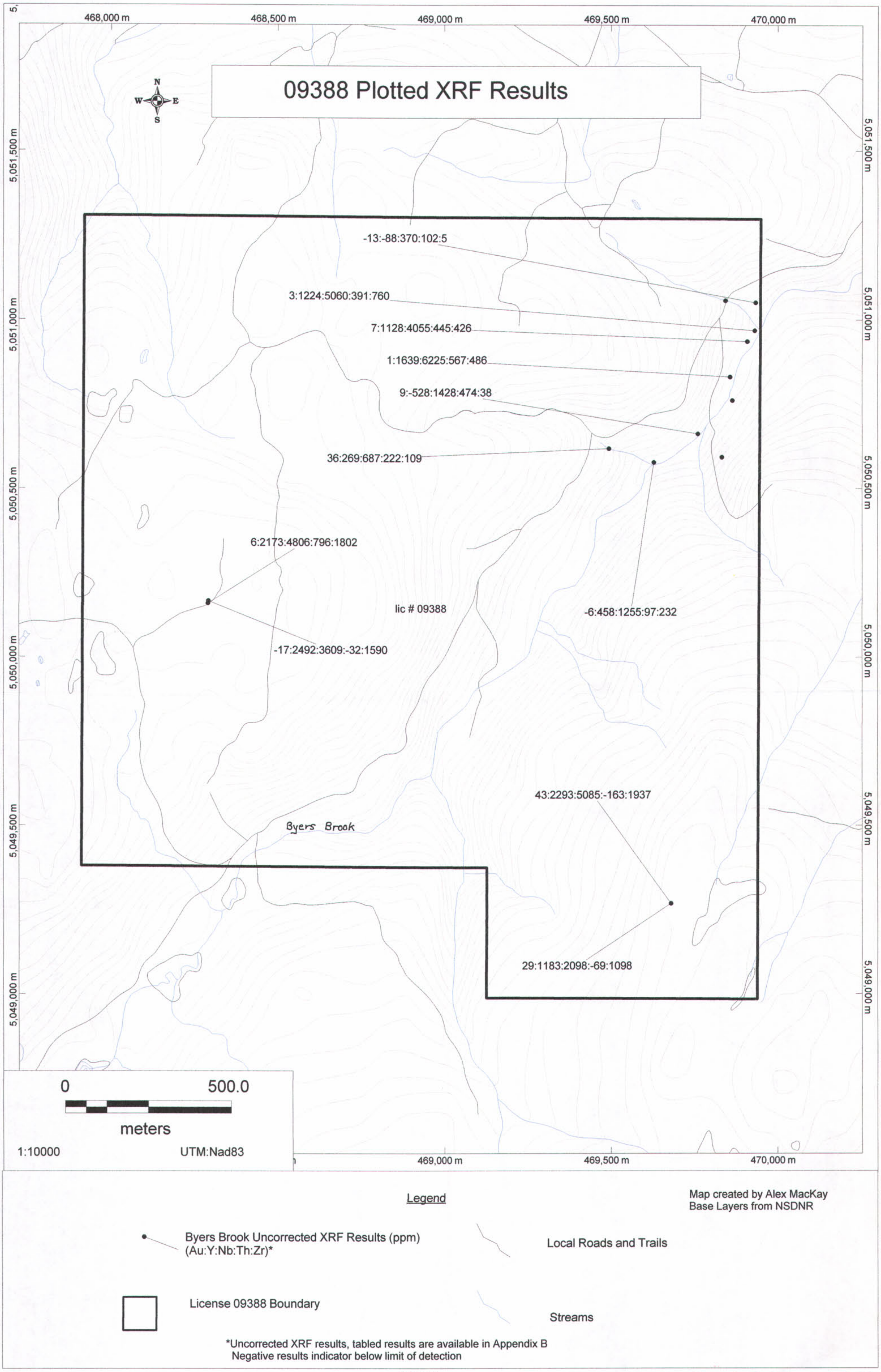
Legend

Map created by Alex MacKay
Base Layers from NSDNR

- Byers Brook Station Locations
- Local Roads and Trails
- NSDNR Mineral Occurence
- License 09388 Boundary
- Streams
- NSDNR abondoned Mine shaft

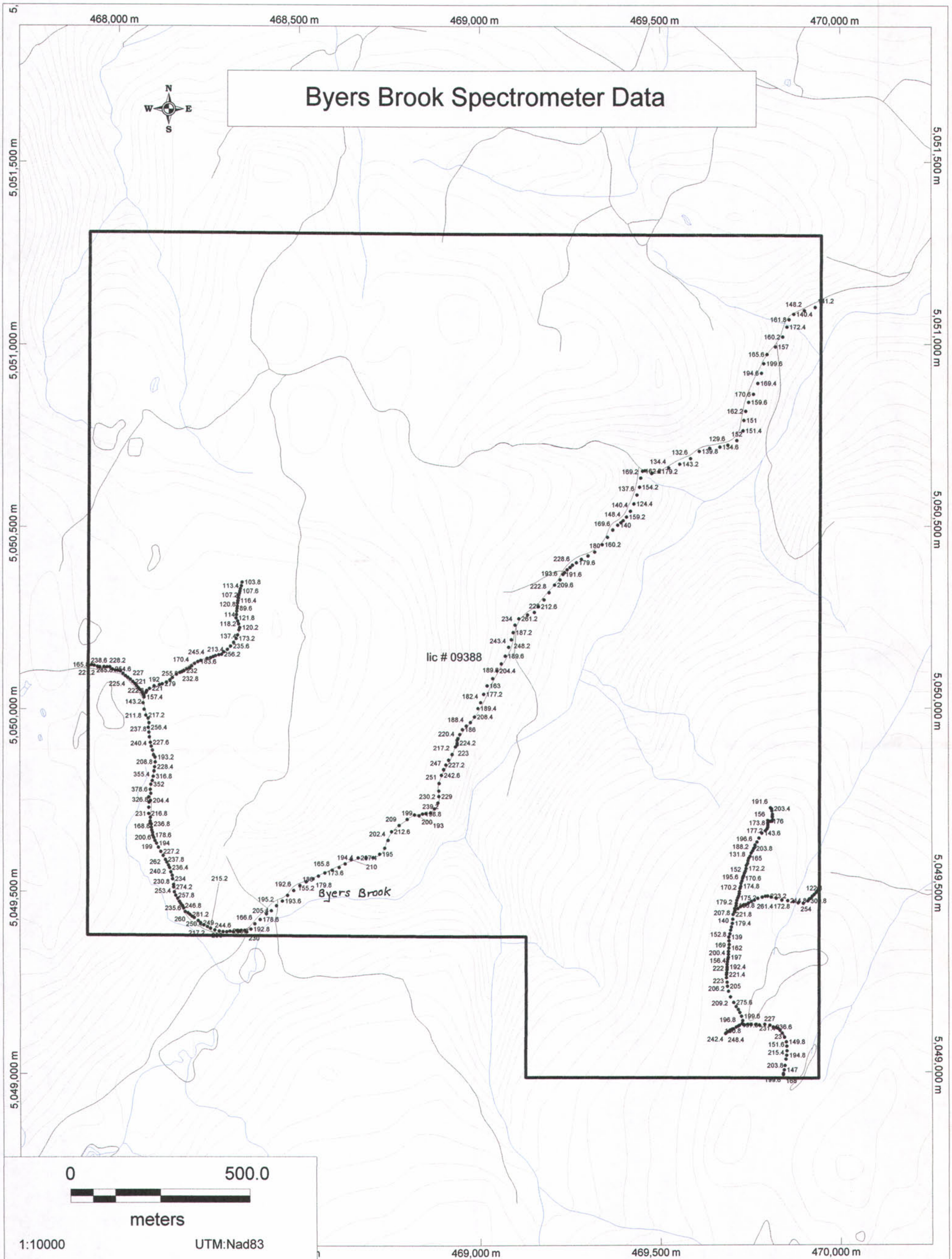
Map 1

AR2011-108



Map 2

AR2011-108



Legend

Map created by Alex MacKay
Base Layers from NSDNR

• Byers Brook Spectrometer Readings (Average Total Counts/sec)*

Local Roads and Trails

License 09388 Boundary

Streams

*Only select data is plotted due to dense data points, full list of readings is available in Appendix A

Map 3

AR2011-108

APPENDIX E

XRF Analyzer Specs and Theory

DELTA
Dynamic XRF

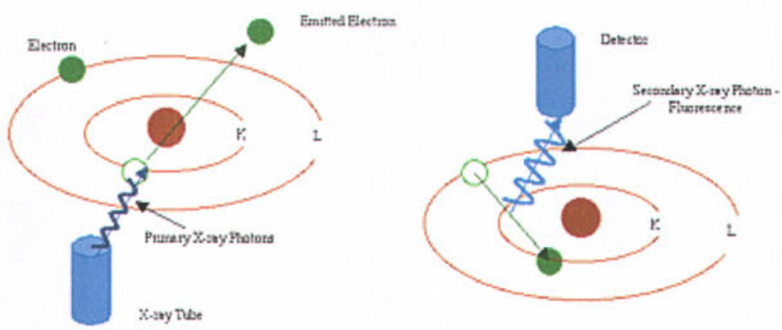
X-Ray Fluorescence (XRF) Spectrometry

BASIC THEORY

Although more popularly known for its diagnostic use in the medical field, the use of x-rays forms the basis of many other powerful measurement techniques, including X-ray Fluorescence (XRF) Spectrometry.

XRF Spectrometry is used to identify elements in a substance and quantify the amount of those elements present to ultimately determine the elemental composition of a material. An element is identified by its characteristic X-ray emission wavelength (λ) or energy (E). The amount of an element present is quantified by measuring the intensity (I) of its characteristic emission.

All atoms have a fixed number of electrons (negatively charged particles) arranged in orbitals around the nucleus. Energy Dispersive (ED) XRF and Wavelength Dispersive (WD) XRF Spectrometry typically utilize activity in the first three electron orbitals, the K, L, and M lines, where K is closest to the nucleus.



In XRF Spectrometry, high-energy primary X-ray photons are emitted from a source (X-ray tube) and strike the sample. The primary photons from the X-ray tube have enough energy to knock electrons out of the innermost, K or L, orbitals. When this occurs, the atoms become ions, which are unstable. An electron from an outer orbital, L or M, will move into the newly vacant space at the inner orbital to regain stability. As the electron from the outer orbital moves into the inner orbital space, it emits an energy known as a secondary X-ray photon. This phenomenon is called fluorescence. The secondary X-ray produced is characteristic of a specific element. The energy (E) of the emitted fluorescent X-ray photon is determined by the difference in energies between the initial and final orbitals of the individual transitions.

This is described by the formula

$$E=hc\lambda^{-1}$$

where h is Planck's constant; c is the velocity of light; and λ is the characteristic wavelength of the photon.

Energies are inversely proportional to the wavelengths; they are characteristic for each element. For example the Kα energy for Iron (Fe) is about 6.4keV. Typical spectra for EDXRF Spectrometry appear as a plot of Energy (E) versus the Intensity (I).

Elemental Analysis

XRF Spectrometry is the choice of many analysts for elemental analysis. XRF Spectrometry easily and quickly identifies and quantifies elements over a wide dynamic concentration range, from PPM levels up to virtually 100% by weight. XRF Spectrometry does not destroy the sample and requires little, if any, sample preparation. It has a very fast overall analysis turnaround time. These factors lead to a significant reduction in the per sample analytical cost when compared to other elemental analysis techniques.

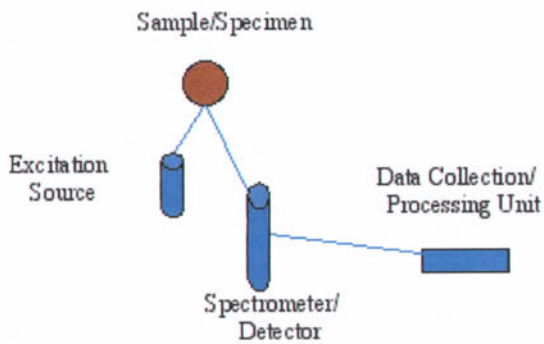
Aqueous elemental analysis instrument techniques typically require destructive and time-consuming specimen preparation, often using concentrated acids or other hazardous materials. Not only is the sample destroyed, waste streams are generated during the analysis process that need to be disposed of, many of which are hazardous. These aqueous elemental analysis techniques often take twenty minutes to several hours for sample preparation and analysis time. All of these factors lead to a relatively high cost per sample. However, if PPB and lower elemental concentrations are the primary measurement need, aqueous instrument elemental analysis techniques are necessary.

All elemental analysis techniques experience interferences, both chemical and physical in nature, and must be corrected or compensated for in order to achieve adequate analytical results. Most aqueous instrument techniques for elemental analysis suffer from interferences that are corrected for by extensive and complex sample preparation techniques, instrumentation modifications or enhancements, and by mathematical corrections in the system's software. In XRF Spectrometry, the primary interference is from other specific elements in a substance that can influence (matrix effects) the analysis of the element(s) of interest. However, these interferences are well known and documented; and, instrumentation advancements and mathematical corrections in the system's software easily and quickly correct for them. In certain cases, the geometry of the sample can affect XRF analysis, but this is easily compensated for by selecting the optimum sampling area, grinding or polishing the sample, or by pressing a pellet or making glass beads.

Quantitative elemental analysis for XRF Spectrometry is typically performed using Empirical Methods (calibration curves using standards similar in property to the unknown) or Fundamental Parameters (FP). FP is frequently preferred because it allows elemental analysis to be performed without standards or calibration curves. This enables the analyst to use the system immediately, without having to spend additional time setting up individual calibration curves for the various elements and materials of interest. The capabilities of modern computers allow the use of this no-standard mathematical analysis, FP, accompanied by stored libraries of known materials, to determine not only the elemental composition of an unknown material quickly and easily, but even to identify the unknown material itself.

Spectrometers

Innov-X Systems utilizes the EDXRF Spectrometer technique for its mechanical simplicity and excellent adaptation to portable field use. An EDXRF system typically has three major components: an excitation source, a spectrometer/detector, and a data collection/processing unit. The ease of use, rapid analysis time, lower initial purchase price and substantially lower long-term maintenance costs of EDXRF Spectrometers have led to having more systems in use today worldwide than WDXRF Spectrometer systems. Handheld, field portable EDXRF units can be taken directly to the sample as opposed to bringing the sample to the analyzer and configuring it to fit in an analysis chamber. Innov-X Systems portable, handheld EDXRF units solve real 21 st century application problems: solving crimes, analyzing alloys, exposing pollution, preserving history, searching for WMD's, conserving art treasures, and a myriad of other elemental field-oriented analyses.



The Deltas' Cutting-edge features include:

- Exceptional speed and sample throughput due to state-of-the-art electronics, a floating point processor, and redesigned analytical geometry

- Ruggedized, weather and dustproof industrialized LEXAN housing – no PDA or movable screen – provides superior reliability

- Significant improvement in LODs and light element analysis resulting from the DELTA's unique 4W, 200μA (max) x-ray tube

- Advanced integrated technology including an accelerometer, barometer, true hot-swap battery capabilities, and other innovations
- Icon-driven UI via bright, Blanview ™ color touchscreen
    - brightens in sunlight – easy to read in all environments
- Available with fully integrated camera and X-ray spot collimation
    - crisp accurate sample images that can be archived into memory
    - small spot collimation for focusing the beam to a 3mm diameter spot.

Innov-X has reinvented on-site analysis with the DELTA line; a new breed of handheld XRF. We've redesigned our analyzers from the ground up to create instruments that are both analytically superior AND rugged enough for virtually any environment. The DELTA analyzers feature the very latest in large area silicon drift detector technology, and unique 4W, 200μA (max) x-ray tubes for maximized accuracy and precision.

DELTA analyzers are also fully industrialized tools, and offer unsurpassed testing speed; yielding significantly increased productivity and throughput for operators. Take hundreds more tests per day with the DELTA analyzer. Smart on the inside. Tough on the outside. **No compromises.**

The DELTA line of analyzers feature our signature upgradeability. Customers may purchase a value-leading **Classic** model and upgrade to the analytically best **Premium** model at any time as analytical needs change - all with the same hardware platform and intuitive, friendly user interface.

The Innov-X Handheld XRF for elemental analysis meets EPA Method 6200 for metals in soil, NIOSH Method 7702 for lead in air filters, and OSHA Methods OSSA1 and OSS1 for lead in air filters and dust wipes. The 8 RCRA Metals and Priority Pollutant Metals are easily monitored on-site with the Innov-X Handheld XRF.

The Innov-X Systems Materials Testing & Mining Analyzers include standard hardware and accessories. Capabilities available include Fundamental Parameters, Empirical Analysis, linear or quadratic calibration modes, LEAP for Light Element Analysis, and Single or Multi element analysis capability.

NOVA SCOTIA
Natural Resources

Map 11E 11B
Refs.

Form 10 - Statement of Assessment Work Expenditure

(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09388 Date of issue OCT 28, 2010

	Type of Work		Amount Spent
1.	Prospecting (2MEN 400+300) x 1.5DAY x 700	3 days	1050.00
2.	Geological mapping	___ days	
3.	Trenching/stripping/refilling	___ m^2 / ___ m^3	
4.	Assaying & whole rock analysis XRF + TECHANICIAN XRF OF ~~[illegible]~~ SEDIMENT SAMPLES	___ #	1025.00
5.	Other laboratory GOLD GRAIN COUNTS 4SAMPLES @ 100	4 #	400.00
6.	Grid:		
	(a) Line cutting	___ km	
	(b) Picket setting	___ km	
	(c) Flagging	___ km	
7.	Geophysical surveys Airborne:		
	(a) EM/VLF	___ km	
	(b) Mag or Grad	___ km	
	(c) Radiometric	___ km	
	(d) Combination	___ km	
	(e) Other ___	___ km	
8.	Geophysical surveys Ground:		
	(a) EM/VLF	___ km	
	(b) Seismic soundings	___ #	
	(c) Magnetic/telluric	___ km	
	(d) IP/resistivity	___ km	
	(e) Gravity	___ km	
	(f) Other RADIOMETRICS { 1/2 DATA COMP. / 2.5DAY SURVEY	___ km	{ 275.00 / 1712.50
9.	Geochemical surveys		
	(a) Lake, stream, spring		
	(i) Water	___ samples	
	(ii) Sediments – 1/2 DAY SLUICING OF STREAM SEDIMENTS 2MEN	___ samples	
	(b) (i) Rock	4 samples	350
	(ii) Core	___ samples	
	(iii) Chips	___ samples	
	(c) (i) Soil	___ samples	
	(ii) Overburden	___ samples	
	(d) Gas	___ samples	
	(e) Biogeochemistry	___ samples	
	(f) Sample collection	___ samples	
	(g) Other ___	___ days	
10.	Drilling:		
	(a) Diamond (# holes/m)	___ / ___ m	
	(b) Percussion (# holes/m)	___ / ___ m	
	(c) Rotary (# holes/m)	___ / ___ m	
	(d) Auger (# holes/m)	___ / ___ m	
	(e) Reverse circulation (# holes/m)	___ / ___ m	
	(f) Logging, supervision, etc.	___ days	
	(g) Sealing (# holes)	___ #	
11.	Other (describe) FIELD MEALS 3DAYx2MEN x25 = 150 CHAINSAW 3DAY@20 = 60 1NIGHT MOTEL = 90 MILEAGE 720Km @ 50¢ = 360 ATV 1DAYx60 = 60	150 60 90 360 60	720.00
	Subtotal	720	5,532.50
	Overhead costs 10% OVERHEAD		553.25
12.	Secretarial services		
13.	Drafting services		
14.	Office expenses (rent, heat, light, etc.)		
15.	Field supplies		
16.	Compensation paid to landowners		
17.	Legal fees		
18.	Other (describe)		
	Subtotal		
	Grand total		6085.75

List the names of the persons who conducted the work reported in the previous table and the dates during which the work was performed.

Name	Address	Dates Worked
ALEX MACKAY	FAIRVIEW HALIFAX	OCT 15/2011
ALEX DEBAY	19 MARYLYN CT DARTMOUTH	OCT 5, 11/2011
ROB KRIENKE	WASHMILL DR HALIFAX	OCT 6/2011
LINDSAY ALLEN	11 RIVER RD TERENCE BAY	OCT 5, 6, 11/2011

I hereby certify that the information in this form is true and correct, that it has not before been submitted for assessment work credit and that it is the total of all work conducted on the licence during the past licensed year.

As AGENT I am duly authorized to make this certification.
(position in company or licensee)

Dated at HALIFAX in the Province of NS on Oct 28, 11.

Name and address of licensee: MATTHEW SACCO
2173 Rochester Circle OAKVILLE ONTARIO L6M 5E3

Signature [signature]

For further information, contact the Registrar of Mineral and Petroleum Titles at 1-902-424-4068.